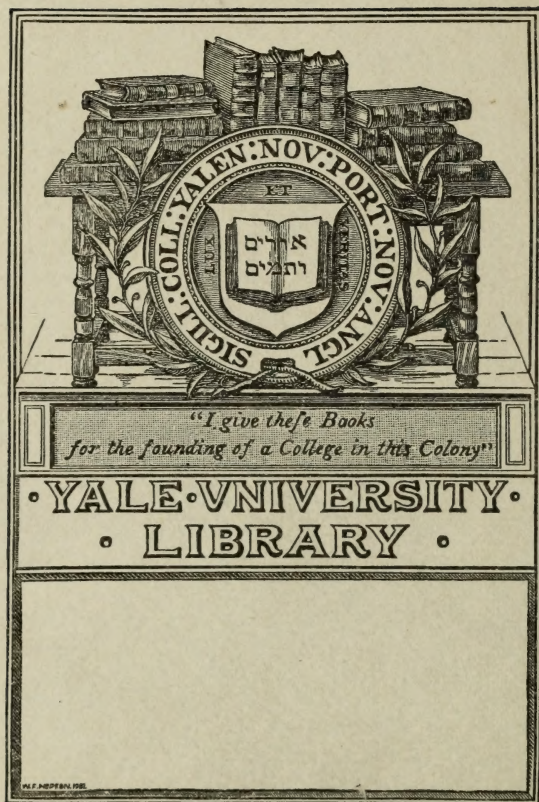


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VOLUME LX

—DECEMBER, 1916—DECEMBER, 1917

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TREATMENT OF ACUTE AND CHRONIC ARTICULAR RHEUMATISM WITH RADIO-ACTIVE MAGNESIUM SUL- PHATE SOLUTION.

(A FURTHER CASUISTIC CONTRIBUTION.)

By Ernest Zueblin, M.D.,

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IN a former paper I published favorable results obtained with mesothorium as well as with radio-active magnesium sulphate solutions applied externally to diseased joints which had not reacted at all to the usual anti-rheumatic remedies.* The present casuistic report adds some more cases to the ones already published. The following observations seem to confirm my former opinion expressed on the subject.

Case I.—J. C.; aged 16; admitted March 23; discharged May 18, 1915. Diagnosis: Acute articular rheumatism and malignant endocarditis.

On admission patient complained of acute arthritis for the past two weeks affecting both knees, shoulders and hips. Temperature on admission $101\frac{3}{5}$, assumed a fluctuating septic type for the first three weeks, with morning remission to 99. Cheeks flushed, considerable tenderness of all the joints with swelling. No concise information possible on account of patient's toxic and febrile condition.

Physical findings of importance: Cyanosis of the lips and of the mucous membrane, poor preservation of teeth, congestion of the throat, marked pulsation of the carotids.

Heart.—Apex beat in sixth I. C. space, four inches from the sternum, absence of thrills, hypertrophy and dilatation of the heart; on auscultation over mitralis soft systolic murmur transmitted to axilla, marked accentuation of the second pulmonic sound, soft, not transmitted diastolic murmur over the tricuspid

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area. Pulse accelerated, varied between eighty and one hundred and ten, irregular, easily depressible. Respiratory organs: Breath sounds indistinct over both bases, but no dullness noticed.

Abdominal Findings.—Rigidity of the rectal muscles, moderate tenderness along the lumbar vertebræ.

Extremities.—Enlarged inguinal glands, considerable swelling of both knees and hips and of the shoulders, with tenderness particularly over the right side; moderate tenderness on palpation of the spine.

April 15.—Moderate swelling of the right elbow, tenderness of the capsule and of the triceps tendon and of the head of the radius; impaired motility of the same joint.

The salicylate medication on which the patient was kept for five days, twenty grains every two hours, at first was beneficial. On April 3 salicylate ointment was applied externally to the wrists, but no marked improvement could be noticed. Salol grains twenty t. i. d., which was given for eleven days, did not give much improvement. On April 30 the patient presented considerable swelling of both wrists, with a slight rise of temperature. As the application of salicylate ointment for three days did not give the slightest improvement, radio-active magnesium sulphate solution was applied to the joints, which was followed by a rapid improvement, *disappearance of the swelling and tenderness, with gain in the passive and active motility.*

The patient when discharged was considerably improved concerning his joint involvement; with regard to the heart findings, however, no particular change could be noticed. Whilst the patient before the application of magnesium sulphate solution presented an irregular temperature, it is of interest to note that very shortly afterwards his temperature became and stayed normal.

Case II.—L. H.; Ward A, Bed 9; 61 years old; watchman; entered hospital June 8, 1915; discharged July 5, 1915. Complained chiefly of rheumatism and swelling of joints.

F. H.—Negative.

P. H.—Had malaria in 1885; pleurisy in 1907; Neisser infection when young. Moderate alcoholic habits.

Present illness started seven days ago with symptoms of cold, chilly sensation and abundant perspiration; four days later his left knee became tender and swollen, rendering walking impossible. Gradually the other joints became similarly involved.

Digestive Symptoms.—Anorexia, otherwise negative.

Patient is easily inclined to take a cold, expectorates moderately. Absence of cardiac, nervous or sensory symptoms. Patient has frequency of urination.

Temperature at time of entrance in the hospital fluctuated between one hundred and one and three-fifths and ninety-eight and one-fifth, with irregular, rapid pulse from one hundred and twenty-five to eighty-four, respiration being normal. The local findings of interest are briefly as follows:

Left knee is considerably swollen, superficial veins dilated, marked rise of local temperature, fluctuation, bulging of the lateral and upper cul-de-sacs, tenderness of the capsule and of the inner and upper condyle and part of tibia. Marked tenderness of the head of the fibula, diffuse infiltration of the popliteal space. Circumference over the middle of the patella fifteen and three-quarter inches of the left knee, as compared with the right knee thirteen and one-quarter inches. Impaired motility, flexion possible only to the extent of thirty degrees. Scaly aspect of both anterior surfaces of the legs and feet, dark brown pigmentation, inguinal glands enlarged but not tender. Right knee: Capsule thin, not tender, outlines of the joint and of the knee-cap are normal; no impaired motion nor pain.

Teeth show marked pyorrhea.

Laboratory Findings.—Urine amber, specific gravity 1024; marked indicanuria, occasionally albumen in later specimens, no sugar is found, but a few hyaline casts, red blood and pus cells. Total amount in twenty-four hours, four hundred and eighty c.c., urea 18.24 gr.

Blood.—Hglb. 75 per cent., leucocytes, 19,000; polymorphonuclears, 85 per cent.; small mononuclears, 12 per cent.; large mononuclears, 3 per cent.

On June 9 patient is given treatment of local applications of radioactive magnesium sulphate solution to his left knee, renewed every two hours. *The following day the left knee is found considerably improved, no tenderness on pressure nor on touch is present, gain in motility; fluctuation is still noticeable.* At the same time patient complains of swelling and tenderness of his right knee for which the application of magnesium sulphate is also given. A few days afterwards *the swelling of the right knee is found diminished*, no subjective nor objective pain is elicited by extensive flexion and extension of the joint. *Capsule appears considerably less tender.* The status of the left knee is also improved, fluid seems less abundant than on former examination. *No pain at all can be produced by deep pressure and extensive handling of the joint; flexion and extension are almost normal.* The periarticular veins are still distended and tortuous. The tenderness and infiltration previously existing on the inner side of the popliteal space has markedly diminished.

The right wrist is considerably swollen, local temperature increased, marked tenderness on flexion and extension, with impaired motility as to abduction and adduction and extended rotation are causing considerable pain. After the application of radio-active magnesium sulphate solution a *marked improvement* can be noticed.

The temperature of the patient remained septic with daily fluctuations of about three degrees.

Patient's general condition is considerably improved. When he arrived at the hospital he was confined to bed, but on account of the rapid improvement he was able to be out of bed after two

weeks; gradually the applications of radioactive magnesium sulphate solution were reduced and finally stopped.

On account of the marked *indicanuria* bowels were kept open, and from the seventeenth up to the twenty-first of June five grains of salol were given; no salicylates were administered and the improvement must be ascribed to the local applications as recorded.

For the purpose of brevity I will only mention the chief facts of interest in the following histories; the treatment with activated magnesium sulphate solution, the clinical changes and the results being the same.

Case III.—J. P.; aged 29; British sailor; admitted September 18, 1915; discharged September 24, 1915. Diagnosis: Acute infectious arthritis.

F. H.—Negative.

P. H.—Beriberi in 1907, malaria, Neisser andluetie infection in 1913. Patient susceptible to colds and sore throat, attack of rheumatism in 1914.

Present Illness.—Since last three weeks complains of pain, swelling of right knee, left ankle and inability to walk. Cardiovascular symptoms absent, but positive history of cough, hemoptysis five years ago. Urinates frequently during night.

Physical findings of the well-developed muscular patient.—Except swelling, pain and tenderness of the right knee and of the left ankle, negative. Enlarged prostate, with moderate discharge after massage of the gland; negative urinary findings; Wassermann test blood fixation 25 per cent. positive. Absence of auscultatory cardiac findings; low systolic blood pressure (105 systolic, 70 diastolic).

The patient's joints were treated with compresses of activated magnesium sulphate solution, which medication produced a *rapid improvement of the subjective complaints*, and also of the *objective joint manifestations*.

Case IV.—S. B.; 27 years old; a married woman; suffering from a relapse of articular rheumatism.

The magnesium sulphate solution was applied to the right knee, presenting *considerable swelling*, pain and reduced motility. The result of the treatment also in this instance became rapidly obvious; within a few days the *subjective and objective symptoms had improved*.

Case V.—Mrs. M. W.; married; 40 years old; mother of seven children; suffering from the fifth recurrence of multiple articular rheumatism. This time the right knee, left ankle, right shoulder, arm and fingers were involved. The following pathological changes are found for the right knee: Marked swelling, considerable pain spontaneously and during motion, rise of local temperature, considerably impaired motion. The same findings are present for the left ankle, the right arm, shoulder, elbow, all the small joints of the right hand. Irregular febrile temperature is present, with occasional elevation to $101\frac{2}{5}^{\circ}$ F.

Whilst at first the patient spent painful and restless days and nights on account of the joint involvements, which complaints were not reduced by 60 grains of triple bromides, with the magnesium sulphate applications a quick change and improvement became noticeable. Within a *few days a material reduction of the swollen joints and a considerable improvement of the formerly-reduced motility* was noticed, so that *without any internal medication* of any salicylates whatsoever the compresses were only applied over night, and finally discontinued altogether.

Case VI.—Mrs. N. G.; aged 36; married; suffering from several attacks of subacute polyarthritides for the past two years. Presented swelling, tenderness, impaired active and passive motility of both ankles, both wrists and the small joints of both hands.

In this case the application of radio-active magnesium sulphate solution in form of compresses was followed by a *rapid regression of the swelling, the tenderness and a decided gain* in the formerly-impaired function.

Case VII.—Mr. L. F.; aged 51; married; engineer; had several attacks of acute rheumatism for the past 15 years which affected his back, knees and hands. For the past four weeks patient was afflicted with an acute attack, involving chiefly the small joints of the right index, the middle finger, which parts presented considerable redness, swelling, tenderness, thickened capsule and impaired motility. The local application of the magnesium sulphate compresses was followed by a quick relief of the above-mentioned symptoms.

Case VIII.—Mr. N.; aged 60; former bartender; had been suffering for the past two years from multiple deformant arthritis of his wrists, hands, ankles and knees. For the past eight months patient was unable to walk, suffering continuous rheumatic pain in the affected joints. Previous treatment, salicylates in high doses, had not given any relief whatever, and the former physician advised amputation of the foot. The patient, very much scared at such a suggestion, called for my advice on May 8, 1916.

Among the physical findings in this instance I would mention a considerable deformity of both tibiotarsal joints, attended by marked redness, swelling from the lower third of both legs and extending to the metatarsus. The capsule of the tibiotarsal joints was distended by fluid, appeared thickened on palpation, considerable pain being experienced by the slightest touch. The patient maintained his feet as quiet as possible, and did not allow the slightest movement. Pressure in the axle of the foot upon the tibiotarsal joint did not cause an increase of pain.

Local application of the radio-active magnesium sulphate compresses was advised at once, and this treatment kept up for a week. The result was very satisfactory, as already on *the second day the swelling, pain and tenderness of the involved joints had considerably lessened*, and the patient was less afraid to move his feet. The improvement continued steadily, so after *four days the local applications could be applied less frequently and for a*

shorter time. After *eight days* they were *discontinued altogether*. By that time the patient, who for the past eight months had not been able to leave his bed, was gradually permitted to stay out of bed, to go downstairs, to walk. Although the tibiotaral joints could not be expected to become entirely normal, the patient at least was free from pain and able to walk with a stick. About two weeks later he reported to my office as completely satisfied with the therapeutic results so far achieved.

Case IX refers to a married woman (Mrs. X. D.), aged 38 years, who, after vaccine treatment for chronic pharyngitis, had been suffering for the past six weeks from acute polyarthritis. Patient was unable to walk on account of her rheumatic attack. Both knees, ankles, shoulders and wrists presented much swelling, tenderness, thickened capsule, with painful, reduced motility.

In this instance the local application of radio-active magnesium sulphate solution gave *quick and satisfactory results*, as observed in the previous cases, so it will not be necessary to dwell any longer upon the various steps of improvement.

In all the above nine cases we were able to observe an improvement of the subjective and objective joint symptoms. Subjectively, the pain, swelling and the impaired motion was relieved within a short time. Clinical observation suggests that the magnesium sulphate medication must favor the regress of periarticular infiltration and swelling as well as lessening the articular effusion.

Furthermore, in these conditions the suppression of pain means a great help in the recuperation of a normal function, since we know very well how quickly an ankylosis of the joints is established by the lack of motion.

If we consider that in most of these reported cases the usual antirheumatic medication, even in high doses, was not attended by the expected therapeutic results, it is in obstinate cases of articular rheumatism at least advisable to resort to the local application of moist compresses containing radio-active magnesium sulphate.

The same treatment may become advisable in cases in which the use of salicylates is not recommendable on account of an existing idiosyncrasy to the drug or in instances of gastritis, etc. From the former studies of four cases (II, III, IV, V)* and the present communication the immediate results obtained by these local applications are encouraging. As to the final results, more time has to elapse before an opinion can be given as to how the treatment can be successfully modified for the benefit of the patient.

Theoretically, one may ask for an explanation of the beneficial action of this compound upon inflammatory conditions. J. Melzer and Auer's investigations† regarding the action of magnesium compounds upon the nerve cell and neurons are of great interest. It remains doubtful, however, whether their explanation applies

**New York Medical Journal*, August 19, 1916.

†S. I. Meltzer, *J. A. M. A.*, Vol. LXVI, p. 931, March 25, 1916.

also to the therapeutic results expected in chronic joint lesions. So far very little is known about the finer mechanism of such a preparation. Must we resort to physical chemistry of the colloids for answering our curiosity? Only further investigation will help in the solution of this problem.

Of course, the quickest and more striking results are to be expected when mesothorium and radium are available, but, as already mentioned, in cases where these expensive means are not at hand the radioactive magnesium sulphate medication can only enhance the therapeutic results expected by the customary methods.

THE NATURE OF THE RADIO-ACTIVE ELEMENTS AND THEIR RADIATIONS.*

By Charles H. Viol, Ph.D.

RADIUM AND ITS RAYS.†

LIKE so many of the great discoveries, the discovery of that property of matter called "radio-activity" was the result of an accident. In 1896 the French physicist, Becquerel, was investigating the effect of the fluorescent light of uranyl potassium sulphate upon photographic plates enclosed in a light-proof cover. One cloudy day the uranium salt was laid upon the covered plate in a drawer to await a day when the salt might be excited to fluorescence by the action of sunlight. Several days later, when a new plate was put into the holder and the old one developed, to his great surprise, Becquerel found that in the closed dark drawer the unexposed salt had strongly affected the photographic plate, causing a very dark spot. Numerous experiments convinced Becquerel that he had discovered a new property of matter, and careful investigation showed that this property of affecting the photographic plate was peculiar to the element uranium, the effect being proportional, ordinarily, to the uranium content of the various salts which were used.

This property of spontaneously sending out energy in the form of rays which, like the X-rays, penetrate through matter and cause such changes, has been called radio-activity, and the rays of these substances sometimes are called Becquerel rays. Later Becquerel found that the rays of uranium cause also the discharge of electrically charged bodies, and Rutherford showed this to be due to the ionization of the gas through which the rays pass. These phenomena were most remarkable, as they seemed to be due to a substance being able to give energy in the form of these rays without undergoing any change or receiving energy in any ordinary form.

*Reprinted from *Radium*, Vol. 1, Nos. 1, 2 and 3, April, May and June, 1913.

†In "Radium and Its Rays" and the following articles on the "Production and Decay of Radio-active Matter" and "The Radio-active Elements," which appeared in Nos. 1, 2 and 3 of Volume 1 of *Radium* (April, May and June, 1913), there is given a brief non-mathematical discussion of the nature of the radio-active elements and their radiations.

The photographic effect and the ionization of gases furnish very delicate tests of radio-activity, the photographic being a qualitative test, whereas the electrical method may be quantitative. Gases ordinarily are non-conductors of the electric current, but when acted on by the Becquerel rays the molecules of the gas are split into electrically charged parts or aggregates called *ions*. The simplest form of instrument for measuring the intensity of the ionization of gas, which is a measure of the intensity of the radiations of a radio-active substance, is some form of a leaf electroscope. A very thin, narrow strip of metal foil, gold, silver or aluminum, is attached by its upper end to a well-insulated vertical metal support which is contained in a metal case, suitably provided with windows for observing the leaf. When a charge of electricity is communicated to the leaf system, the charge on the leaf is repelled by the charge on the metal support and the leaf moves out towards a horizontal position like an inverted L. This repulsion is proportional to the charge on the leaf system. If a radio-active substance causes the air in the electroscope to be ionized—that is, to become a conductor—the charge leaks away and the leaf moves back to a vertical position. By means of a reading microscope and scale, the rate of movement of the leaf may be observed. This rate is proportional to the intensity of ionization of the gas. If the instrument is calibrated, the result may be expressed as a current, since a current is the rate of passage of a quantity of electricity. These ionization currents are exceedingly small, that due to a square centimeter of metallic uranium being 0.00000000000026 ampere. But activities of the order of 1-100th that of uranium may readily be detected by this method.

Uranium is not the only radio-active element, for soon after, in 1898, Schmidt and independently Madame Curie found that the element thorium was radio-active, its activity being a little less than that of uranium. Madame Curie, in studying the various minerals by an electrical method, found that certain of these were more active than metallic uranium, which was supposed to be the most highly radio-active substance. On separating the uranium from these minerals, it was found to have its normal activity, and so it was concluded that the minerals must contain a *more* highly active substance. In a chemical investigation of the residues from the most active of these minerals, a pitchblend from St. Joachimsthal in Bohemia, Madame Curie discovered that the bismuth in the mineral, when separated, possessed a considerable activity. To this new substance she gave the name polonium. Shortly afterwards, Professor and Madame Curie and G. Bemont found that there was another radio-active substance, which remained with the barium from the pitchblend. This barium salt was converted into barium chloride and subjected to a process of fractional crystallization, resulting in a concentration of the radio-active substance, which was found to possess (in a pure state) an activity several

million times that of uranium. This substance was called radium. Later Debierne obtained another active product from pitchblend, which he called actinium. Working with the radio-active substances, other interesting properties were discovered. One is their ability to cause many substances, such as barium-platinocyanide and Sidot's hexagonal blende (a form of zinc sulphide) to become luminous. Curie and Laborde found that radium salts are continuously giving off heat in sufficient quantity to keep the salt several degrees warmer than the surroundings. In one hour one gram of radium evolves sufficient heat to warm 134 grams of water through one degree centigrade (134 calories). Walkhoff, Giesel, Curie, Becquerel and others found that radium rays produce burns on the skin, much the same in character as those caused by X-rays, and it is well known what important and wide application this property, carefully controlled, has found in dermatology and in the treatment of malignant growths.

It may easily be shown by means of an electroscope that the radiation from uranium, polonium, radium and actinium is not homogeneous. A very thin layer of radium salt exposed in an electroscope produces a very intense ionization, so that the charged leaf moves rapidly. If the salt is covered with a thin metal sheet (say 0.006 cm. of aluminum), or mica, or a sheet of ordinary writing paper, the ionization is found to be only a few per cent. of that due to the freely exposed salt. If a second sheet is applied, the ionization is only a little less than that with one sheet. With ten such sheets the ionization is reduced to about one-half that observed with one sheet. This is due to the fact that the first sheet cuts off completely some rays which have a greater ionizing effect. The residual ionization is due to a penetrating type of rays. With very great thickness of metal screening the radium preparation, there is found to be a very penetrating radiation which produces an ionization of the order of one ten-thousandth of that due to the free exposed salt. The readily absorbed rays have been called the alpha (α) rays, those of intermediate penetrating power the beta (β) rays, and the very penetrating radiation the gamma (γ) rays.

The alpha rays produce by far the greatest ionizing effects in gases, although after passing through a few centimeters of air they are completely absorbed. They have been shown to be positively charged helium atoms, shot out with a velocity of about 12,000 miles per second (1-15th the velocity of light). Due to this velocity and the comparatively great mass of the particles, it is only with the most intense electric and magnetic fields that deviations of these rays could be produced. The deviations, however, proved that the particles are electrically charged, for a moving charged body will always be deflected from its path when passing through a sufficiently intense electric or magnetic field, whereas an unchanged body does not change the direction of its motion. Crookes, using a lens, found that the light of phosphores-

cent zinc sulphide made luminous by the rays of radium consisted of numerous flashes of light. The spinthariscopes are instruments which he devised to show these scintillations. A small speck of radium or other highly radio-active material is supported a few millimeters above a zinc sulphide screen fixed in one end of a tube, which contains a lens at the other end. In a dark room the screen is seen as a dark field dotted with brilliant flashes of light, which come and go rapidly. This experiment very vividly impresses the observer with the fact that the radio-active material is continually shooting out particles, whose impact with the screen is marked by a spark of light. This effect was found to be due to the alpha particles; for, if the radium was moved away a few centimeters, or if it was screened with a very thin paper, the scintillations ceased. The length of a path through which an alpha particle produces its characteristic effects of ionization, photographic effect, scintillations, etc., is called its range. The ranges of the alpha particles of the various active substances have been measured and are found to be different for the different elements. The range of the alpha rays of radium is 3.3 cm. in air. This means that at a distance greater than 3.3 cm. from a radium preparation there will be no ionization in air, so far as the alpha rays are concerned, and no scintillations on a phosphorescent screen.

The great energy with which the rays are shot out is the source of the heat that all radio-active bodies produce, for on stopping the alpha rays their extra energy finally is converted into heat. The alpha particles produce the greatest heating effect, furnishing 123.6 calories of the 134 calories which one gram of radium produces in an hour. The effect of alpha rays on the skin, because of their ready absorption, is confined to a thin surface layer, and, depending upon the activity of the preparation and the time of exposure, the effect varies from a faint reddening to an intense necrosis.

The beta rays are about a hundred times as penetrating as the alpha rays and have been found to be of the same type as the cathode rays. They are negatively charged particles, having a mass of $1/6800$ that of alpha particles, and their velocity is of the order of that of light. The total ionization which the beta rays of radium produce in gases is about 3 per cent. of that due to the alpha rays, the heating effect being also of this order, since the beta rays furnish 4.3 calories of the 134 calories given off per hour by one gram of radium. The beta rays of radium are nearly completely absorbed by 8 millimeters thickness of aluminum or 2 millimeters of lead. Roughly, it may be assumed that the thickness of matter required to absorb any type of rays is inversely proportional to the density of the substance, or that the absorption is proportional to the density. Beta rays are more energetic in their action on the photographic plate than are alpha rays, but, while they excite phosphorescent substances, the effect is generally much less than that due to alpha rays. Changes in coloration

take place when many substances are exposed to the action of the rays, but here again the effects of beta and gamma rays are usually much less than those of the alpha rays, although in the latter case the change is limited to a surface layer, whereas the change due to beta and gamma rays penetrates deeper. Some kinds of glass at first become violet, and on longer exposure almost black. The rays cause many chemical changes to take place. They ozonize the air, and under the action of its own rays the solid bromide of radium exposed to air decomposes its water of crystallization into oxygen and hydrogen, the salt loses bromine and is slowly converted into a carbonate. Under the influence of the beta and gamma rays of radium, hydrogen and chlorine combine to form hydrochloric acid, and water is decomposed to give hydrogen and hydrogen peroxide. The physiological effects of the beta and gamma rays—while not so intense as those of the alpha rays—because of the greater penetrating power of the beta and gamma rays, find very useful application in the treatment of many forms of skin diseases, tumors, etc.

The gamma or very penetrating rays are analogous to the X-rays, but are much more penetrating than the X-rays produced in a hard vacuum tube, and they are from 10 to 100 times more penetrating than the beta rays. The total heat effect of the gamma rays of radium is about of the same magnitude as that due to the beta rays. The gamma rays are not deviated by the electric or magnetic field. They are closely related to the beta rays, since they are capable of being transformed into beta rays. It is quite probable that their ionizing effects in gases is due to the secondary beta rays, which the gamma rays produce. The gamma rays of radium are half absorbed after passing through 115 meters of air. Due to the gamma rays, a delicate electroscope could readily show the presence of one gram of radium more than 100 meters distant. The gamma rays of radium are absorbed to the extent of about 40 per cent. after passing through one centimeter of lead; and after passing through 10 centimeters of lead there is still 0.6 per cent. unabsorbed.

Gamma rays from 30 milligrams of radium can still be observed by means of an electroscope after passing through a foot of iron. As it is difficult to accurately measure the current due to the intense ionization produced by larger quantities of radium (quantities of the order of one milligram or more), it is now the practice to compare such quantities of radium by means of their gamma ray ionization current. The international gamma ray radium standard was prepared by Madame Curie by carefully weighing out a quantity of pure, dry radium chloride, and standards prepared by comparison with this international standard furnish the means of accurately estimating larger quantities of radium.

THE PRODUCTION AND DECAY OF RADIO-ACTIVE MATTER.

The radiations from uranium, thorium, radium and actinium are heterogeneous, consisting in each case of the three types of rays—the readily absorbed alpha rays, which are positively

charged helium atoms shot out with about one-fifteenth the velocity of light; the beta rays, which are about a hundred times more penetrating than the alpha rays and consist of negatively charged corpuscles moving with a velocity of the same order as that of light, and the gamma rays, which are from ten to a hundred times more penetrating than the beta rays. The first experiments with uranium, thorium and radium showed that the activity of these substances was spontaneous, and since no change in the intensity of the radiations was found, when observations were made during a period of several years, it was supposed that this activity was permanent. In 1899 and 1900 some observations were made which indicated that some radio-active substances may lose a part of their activity in a very short time. The activity of uranium had been found by Becquerel and Madame Curie to be an atomic property, unaffected by the chemical combination of uranium with other elements. In 1900 Sir William Crookes found that by a single chemical operation he could separate from uranium a very minute quantity of a substance, free from uranium, which, as measured by its effect on the photographic plate, was hundreds of times more active than an equal weight of uranium. This substance he called uranium X, the "X" indicating, as in algebra, an *unknown*. Becquerel found another method for separating uranium X from uranium by precipitating barium sulphate in a solution of uranium salt, the barium sulphate carrying down the uranium X, leaving a uranium solution that was inactive (photographically). A year later he found the barium sulphate was *quite inactive* and that the uranium had *regained its activity*. Rutherford and Soddy found it possible, by a single operation, to separate a substance from *thorium* which in cases was thousands of times more active than an equal weight of thorium. This substance they called *thorium X*. In the case of thorium it was not possible to completely remove all the activity, a limit being reached when the activity of the thorium was reduced to about a third of its initial value. In a month after its preparation thorium X was found to be inactive, and the thorium, from which it had been separated, had regained its normal activity. Accurate electrical measurements of the alpha ray activity of thorium X and thorium, free from thorium X, showed that the former product lost its activity at the same rate that the thorium regained its activity, so that in four days half the activity of the thorium X was gone and the thorium had regained half of its lost activity. In another four days half of the remaining activity of the thorium X was lost and the thorium had regained a corresponding amount, and so on, until by the end of the month the thorium X was practically inactive and the thorium had regained its original activity. Similar measurements on the beta rays of uranium X (the beta rays are much more active photographically than the alpha rays, so that in Becquerel's work the uranium, free from uranium X and producing only alpha rays, was inactive, in comparison with

the uranium X, which produces the photographically active beta and gamma rays) showed that the uranium X lost half of its activity in about 25 days and that the uranium recovered half of its lost activity in the same time.

The velocity of all ordinary chemical reactions may be varied by suitably varying the conditions of temperature, concentrations of reacting substances, etc. Hydrogen and oxygen gas may be mixed at ordinary temperatures, and the velocity of formation of water, due to their chemical combination, is exceedingly small. But if the mixture is heated the velocity of reaction becomes so great that the combination takes place with explosive violence. In case of radio-active changes, it has, so far, been *impossible* to *change* in the *slightest degree* the *rate* at which the change of activity of the different substances is taking place. In the heat of the electric furnace or the cold of liquid air, in a state of high concentration, or when mixed with enormous quantities of other forms of matter, the uranium X and thorium X—in fact, all radio-active substances, as we shall see—undergo a loss of activity at a definite rate which is characteristic for each of the substances. The time required for the activity of a quantity of a definite radio-active substance to fall to half its initial value, as measured, for example, by its saturation ionization current in an electroscope, is called the “half value period,” or, briefly, its *period*. Radio-activity seems to be due to a spontaneous production of new forms of active matter, as, for example, uranium X from uranium, and the laws which control this production differ from the laws governing ordinary chemical reactions, since by no known means can the rate of formation or decay of the activity of the radio elements be influenced. The alpha, beta and gamma rays and the very considerable quantities of energy with which their rays are endowed must also be accounted for.

In 1903 Rutherford and Soddy advanced the hypothesis that the atoms of the radio-active elements are suffering spontaneous disintegration and that each atom so changing passes through a well-defined series of changes, accompanied usually by the emission of an alpha ray. This theory supposes that on an average, in a given time, a certain definite fraction of all the atoms of any radio-active substance become unstable and these atoms break up. This process of disintegration of the atoms is very violent, and usually results in the throwing off of an alpha particle with great velocity. In the case of some substances apparently alpha, beta and gamma radiation are produced in the breaking up of the atom, while in other cases—as, for example, uranium X—the atom gives off a beta particle and gamma rays; and in a few cases there is evidence of so-called “rayless” changes. The corpuscular theory of matter supposes the atoms to be built up of corpuscles or beta particles in rapid motion about a positively charged center, much as the planets in our solar system move about the sun. With certain space arrangements it is conceivable that the grouping of these

parts in the atom should lead to a condition of instability, resulting in the disintegration of the atom, and the throwing off of some constituent part of the atom with a tremendous velocity, the bulk of the atom remaining to form an atom of a new substance. From this standpoint we may view the formation of uranium X from uranium and thorium X from thorium. Some of the uranium atoms become unstable and disintegrate, each one shooting out an alpha particle and leaving an atom of uranium X. Only an exceedingly small fraction of all the uranium atoms present undergoes this change in any short interval, and this *very slow decay* of the uranium makes the activity of the uranium, as measured by the ionization current due to its alpha rays, *sensibly constant*. The *period* of uranium is estimated to be about 5,000,000,000 years.

In a given quantity of uranium there are being produced every second a *certain definite* number of atoms of uranium X. If the uranium is initially freed from uranium X by any suitable chemical means, there will be formed in the first second this same *definite* number of uranium X atoms, and of these a certain proportion will be changed into the next product—but *not all* will change. In the next second more uranium X atoms are formed, and since there are now these together with the uranium X atoms which did not disintegrate in the preceding second, the number which do change in the second second is greater, since this number is always the same definite fraction of the total number of uranium X atoms present. This process of piling up of uranium X atoms goes on until the number of uranium X atoms changing in an instant is equal to the number of these which are formed per instant from the uranium. This limiting condition is called that of *radio-active equilibrium*. The exact mathematical development of this state of radio-active equilibrium enables us to calculate the quantity of uranium X which is in equilibrium with a quantity of uranium, this being about one hundred-millionth of a gram of uranium X for a kilogram of uranium. Thorium, which is decaying with a period of about 13,000,000,000 years, gives rise to the thorium X in a similar manner. The remarkable amounts of energy which are associated with radio-active changes may now be accounted for. It comes from the stores of energy that are within the atoms of the transmuting elements. The total extent of this internal energy we can only speculate about, but its probable magnitude may be comprehended when it is understood that the energy changes involved in the complete disintegration of one gram of radium equals the heat energy evolved when half a ton of coal is burned. More than 20,000 years are required for the *complete* disintegration of a quantity of radium, so that the energy is liberated rather slowly, and the cost of radium makes the application of very large amounts of "radio-active" energy almost prohibitive.

In 1899 Owens found that the activity of thorium compounds seemed to be variable if a current of air were passed over the sub-

stances. A steady stream of air was found to reduce the activity markedly. Rutherford investigated this peculiar effect, and decided that the thorium was continually giving off *radio-active particles* which possess the property of ionizing gases, acting on the photographic plates, and of rapidly diffusing through porous materials like paper. This substance he called the thorium "emanation," from its gas-like behavior. Special experiments showed that this substance really is *radio-active matter* that is *gaseous*. The thorium emanation must not be confused with the alpha, beta and gamma rays. The emanation is a form of radio-active matter that gives off alpha rays in the process of its disintegration. *Being a gas*, the emanation can easily be blown away in a current of air, and this explains Owens' first observations on the variation of the activity of some thorium compounds. The passage of active matter through porous materials is also explained in this way. The thorium emanation, like thorium X and uranium X, decays in a comparatively short time, its *period* being 54 seconds, so that in 10 minutes after separating the emanation practically all of it has decayed.

Shortly after the discovery of the thorium emanation, Dorn found that radium also gives rise to a characteristic radio-active gas, which from analogy is called the radium "emanation." Thorium emanation and radium emanation are given off only very slowly from the solid thorium and radium salts, but when these are strongly heated or are dissolved the emanations are given off quite freely. The *period* of radium emanation is 3.85 days, and radium free from its emanation will again produce the equilibrium amount of emanation if sealed for about 30 days. Radium emanation is a chemically inert gas of the argon type. Like radium, it shows a characteristic spectrum, and, when strongly cooled, it condenses at -150° C. Diffusion experiments showed that it was a gas of very high atomic weight, and in 1911 R. W. Gray and Sir W. Ramsay actually determined its atomic weight by weighing a known volume of pure emanation. From their results, the atomic weight was found to be 223. The atomic weight of radium is 226.4, and in changing into the emanation one alpha particle (helium atom) is lost from the radium atom. The atomic weight of helium is 4, so that it is to be expected that the emanation would have an atomic weight of 222.4. Some idea of the delicacy of the work of Gray and Ramsay may be obtained when it is known that the weight of emanation used in their experiments was less than one-thousandth of a milligram, that the glass vessels containing the emanation weighed about 30 milligrams, and that the micro-balance on which the weighings were made was sensitive to about one-millionth of a milligram. Gray and Ramsay have suggested the name "niton" (which is Greek for "the shining one") for the radium emanation, since it now may be definitely admitted to be

an element and a higher analogue of the "noble gases," helium, argon, neon, krypton and xenon.

Rutherford and Soddy found that the thorium X, and not thorium, was the parent of thorium emanation, since thorium X separated from the thorium continued to give rise to the emanation, whereas the thorium, freed from thorium X, no longer produced emanation. Uranium does not produce an emanation.

A very remarkable property of radium and thorium is their ability to cause bodies which are exposed to them to become temporarily radio-active. A piece of metal foil exposed to thorium hydroxide for several hours behaves, after removal, as though it were radio-active. This activity was at first called "induced" or "excited" activity, since it was thought that the exposure to the radio-active substances actually caused ordinary matter to become temporarily active. This effect is now known to be the result of a deposit of radio-active matter on inactive bodies, and this radio-active matter is called the "*active deposit*." Matter exposed to radium receives the characteristic radium "*active deposit*." The source of these active deposits is the gaseous radio-active matter or emanations which thorium and radium produce. The emanations diffuse into the air around the preparations, and in decaying give rise to other radio-active matter, which, not being gaseous, collects on whatever objects may be about and constitutes the "*active deposits*." The *periods* of these active deposits have been measured and are found to be 26.8 minutes for the radium deposit and 10.6 hours for the thorium deposit.

The work of a great many experimenters has shown that these active deposits are complex, consisting of a mixture of various successive radio-active products. The various products in an active deposit exhibit characteristic chemical and physical properties, and, by taking advantage of these, separations of the various forms of radio-active matter in the deposit may be effected. These products are always present in unweighably small quantities (due to their short periods), and so these separations must always leave the radio-active material mixed with certain quantities of ordinary inactive matter necessary in order that there may be something tangible to work with. The active deposit of thorium, collected on a platinum plate, may be dissolved in acid or volatilized by heating the plate to a white heat. In the radium series the first product from the emanation, called radium A, has a *period* of three minutes. This radium A in disintegrating forms what is called radium B, a product that has a *period* of 26.8 minutes. Radium B gives rise to beta rays and the product radium C. Radium C, decaying with a *period* of 19.5 minutes, produces alpha, beta and gamma rays and radium D. Radium D has a longer *period*, 16.5 years, so that while the active deposit on a substance which has been exposed to radium emanation at first decays rap-

idly—due to the short *periods* of radium A, B and C—there is left a slight residual activity, due to the slow decaying D, and the subsequent products radium E and radium F. The *period* of radium E is five days, and that of radium F is 136 days. Radium F gives off alpha rays, and we know that the product which Madame Curie first isolated with the bismuth from pitchblende residues, and called polonium, is nothing other than radium F that accumulates in the pitchblende.

In the radium series there are five products that disintegrate, giving off alpha particles (helium atoms), viz: radium, radium emanation, radium A, C and F. Taking the atomic weight of radium as 226.4 and that of helium as 4, it may be supposed that the atom produced when radium F disintegrates should have an atomic weight equal to 226.4 less 5×4 , or 206.4. This is almost exactly the atomic weight of lead, and it is not at all unlikely that the final product in the radium disintegration series is lead.* When larger amounts of radium are available, this point may be settled experimentally, but it can be said that in all old radium ores there is always lead.

THE RADIO-ACTIVE ELEMENTS.

Radio-activity, as generally understood, is the property which certain elements possess of spontaneously sending out rays capable of penetrating through metals and other substances. These rays are further characterized by their ability to effect the photographic plate, to cause the discharge of electrified bodies, and to excite phosphorescence and fluorescence in some substances. Rutherford and Soddy, to account for the phenomena of radio-activity, assumed that, in the case of the radio-elements, the atoms become unstable and disintegrate. This transmutation takes place at a definite rate that is characteristic for each of the radio-active substances. As far as present experiments show, the rate of transmutation of the *radio-elements* is unchangeable, so that the time required for the decay of one-half of any amount of a radio-element, the so-called "*half decay period*," or, briefly, "*period*," is definite for each of the substances. Thus in 1750 years half of all the radium now present in the world will have disappeared, 1750 years being the *period* of radium. The transmutation of the radio-

*Note added July, 1914. Recently T. W. Richards and M. Lemberg (*Journ. Am. Chem. Soc.*, Vol. 36, p. 1329) of Harvard University have published an article on the atomic weight of lead of radio-active origin, in which they present the very remarkable result that the lead from radio-active ores has an atomic weight differing from that of ordinary lead of non-radio-active origin by as much as 0.75 of a unit, in one case. The atomic weight of ordinary lead is 207.15, and that of lead from a North Carolina uraninite was found to be 206.40. Purification had no effect on changing the atomic weights of the different samples, and the ultra-violet spectra of the two kinds of lead were identical. Either an unknown substance mixed with ordinary lead producing the lower atomic weight has the same spectrum as lead itself or has no lines in the region of the spectrum examined, or else the bulk of lead hides the lines of the unknown in the mixture, or else ordinary lead is a similar mixture in different proportions.

elements is usually accompanied by the violent shooting out of an alpha ray (positively charged helium atom), the remainder of the atom becoming an atom of a new element. In this way the atom of radium, a metal, changes into an atom of *niton* or *radium emanation*, a gas. This emanation atom in turn is unstable, and breaks up, giving off an alpha particle and forming an atom of a substance that has been named radium A. Radium A, being a solid substance, settles and forms the *active deposit* of radium. This radium A in turn decays, giving rise to radium B, which produces radium C. Radium C gives off not only alpha, but also the beta and gamma rays when it changes. The beta and gamma rays are more penetrating, being in nature like the cathode and Roentgen rays, respectively. It may be seen, then, that radium salts freshly prepared will give only the alpha rays, but if the emanation is not lost—that is, if the specimen is kept sealed—then this emanation will produce the active deposit which contains radium C. It is by means of these gamma rays of radium C, which reach a maximum intensity about a month after the sealing of the radium preparation, that quantities of radium, from one hundredth of a milligram upwards, may most accurately be determined.

The radio-elements now known number about 30, and may be grouped into four families—the uranium group, the radium group, the actinium group and the thorium group.

In 1898 G. C. Schmidt and, independently, Madame Curie discovered that the element thorium is radio-active. In 1899 Owens discovered the thorium *emanation*, and in 1902 Rutherford and Soddy found the substance thorium X, which is being continually formed in thorium compounds and which in turn is the immediate parent of the thorium emanation. It was first supposed that thorium itself gave rise to thorium X, but later work has shown that there are three intermediate products between thorium and thorium X. Hahn, in 1905, discovered the substance radiothorium, which has been found to be the immediate parent of thorium X. In 1906 certain discrepancies found by McCoy and Ross and by Boltwood in the specific activity of thorium prepared from minerals and from commercial salts led Hahn to suggest that a “rayless” product came between thorium and radiothorium. This new substance was soon after found and called mesothorium. It was found to be complex, and the first product, which gives no rays in changing, is called mesothorium 1. This substance has a period of 5.5 years. A short-lived product coming between mesothorium 1 and radiothorium, called mesothorium 2, decays with a period of 6.2 hours, giving rise to strong beta and gamma rays. It has been possible to separate and concentrate quite considerable quantities of the mesothorium 1 from the enormous quantities of residues left in process of manufacturing the pure thorium salts

which are necessary for the incandescent mantel industry. This mesothorium, weight for weight, is much more active than even pure radium preparations, but it has a comparatively short life, being half decayed in 5.5 years. Thorium emanation, like radium emanation, gives rise to a solid form of radio-active material, which constitutes the thorium *active deposit*. Careful work has shown that this deposit is complex, consisting of a series of successive products which have been called thorium A, thorium B, thorium C₁, thorium C₂ and thorium D, respectively. The longest lived of these is thorium B, with a period of 10.6 hours, so that the decay of activity of the thorium active deposit takes place with this period. Thorium X can be separated from radiothorium preparations in which it forms, and it has been used in medicine, where it has been found to have a considerable effect on the blood, although in several cases injections of high doses of thorium X have led to fatal results.

The actinium series is characterized by the short periods of its products. Actinium itself gives off no rays in changing and its period is unknown. Radioactinium, the next product, has a period of 19.5 days, and actinium X, which forms from radioactinium, has a period of 10.2 days. Like thorium X and radium, actinium X gives rise to a gaseous form of radio-active matter, which is called the actinium *emanation*. This gas has a period of 3.9 seconds, and in decaying gives rise to a characteristic actinium active deposit. This active deposit is also complex, consisting of four successive products that have been called actinium A, actinium B, actinium C and actinium D. Actinium A, the product formed when the emanation atom changes, has a period of 0.0029 second—truly a short-lived element!

Since the period of radium is only 1750 years, it is evident that in about 20,000 years practically all the radium now existing will have transmuted, and, in order to account for the presence of radium today, a longer-lived product must be sought. This parent is the element uranium. A number of researches, beginning with the work of Boltwood, McCoy and of Strutt, have shown that there is a relation between the amount of radium and of uranium in most uranium minerals. Experiments were carried out to test whether the newly formed radium could be detected in uranium initially freed from radium. The experiments gave negative results, and Boltwood found that there is a long-lived product, *ionium*, in the series between uranium, uranium X and radium.

Actinium is always found in the uranium minerals, and its origin is obscure, though it seems probable that it results as a branch product in the uranium series. That is, one of the products in the uranium series is thought to disintegrate in two fashions, one of the products being actinium, the product of the other method of changing being a substance which finally leads to radium.

The following diagrammatic representation of these series of

radio-active elements shows the order in which the products occur, their periods and the rays which they give off in the process of their transmutation:

URANIUM 1 5,000,000,000 years alpha rays			
URANIUM 2 1,000,000 years (?) alpha rays			
URANIUM X 24.6 days beta, gamma rays			
URANIUM Y 1.5 days beta rays			
IONIUM 200,000 years (?) alpha rays			
RADIUM 1,750 years alpha rays			
EMANATION (Niton) 3.86 days alpha rays			
RADIUM A 3 minutes alpha rays			
RADIUM B 26.8 minutes beta, gamma rays			
RADIUM C 19.5 minutes alpha, beta, gamma rays			
RADIUM D 16.5 years beta rays			
RADIUM E 5.0 days beta, gamma rays			
RADIUM F (Polonium) 136 days alpha rays			
LEAD (?)			
	ACTINIUM Period unknown Rayless		
	RADIO ACTINIUM 19.5 days alpha rays		
	ACTINIUM X 19.5 days alpha rays		
	ACTINIUM X 10.2 days alpha rays		
	ACT. EMANATION 3.9 seconds alpha rays		
	ACTINIUM A 0.002 second alpha rays		
	ACTINIUM B 36 minutes beta rays		
	ACTINIUM C 2.1 minutes alpha rays		
	ACTINIUM D 4.71 minutes alpha, beta, gamma rays		
		THORIUM 13,000,000,000 years alpha rays	
		MESOTHORIUM 1 5.5 years Rayless	
		MESTHORIUM 2 6.2 hours beta, gamma rays	
		RADIO THORIUM 2 years alpha rays	
		THORIUM X 3.65 days alpha rays	
		TH. EMANATION 54 seconds alpha rays	
		THORIUM A 0.14 second alpha rays	
		THORIUM B 10.6 hours beta rays	
		THORIUM C 1 60 minutes alpha rays	
		THORIUM C 2 Period very short (?) alpha rays	
		THORIUM D 3.1 minutes beta, gamma rays	
		BISMUTH (?)	

The study of the chemistry of the radio-elements presents many new problems of great difficulty. In the case of the "rare earths" the great difficulty has been to separate the chemically similar elements and make certain that the substances so separated were really not mixtures. Thus the element long known as didymium was later separated by von Welsbach into two substances, which are called neodymium and praesodymium, which are supposed to be elements. In the case of the radio-elements this chemical similarity of elements is also encountered, and in some cases the resemblance of several elements is so great that no means so far tried avails to separate them, although the separate elements may be

prepared in a state of radio-active purity by roundabout means. Thorium, radiothorium and ionium, when together, cannot be separated from each other, and this is also true of mesothorium and radium. Uranium is supposed to be a mixture of two inseparable products called uranium 1 and uranium 2. All the radio-elements are decaying with a period that is characteristic for each element, and this enables one to work with these elements and recognize their presence even when any ordinary means, such as the spectroscope or atomic weight determinations, etc., would be futile. Thorium and radiothorium are chemically identical and inseparable, but mesothorium, which comes between thorium and radiothorium as an intermediate disintegration product, may easily be separated from these. Mesothorium, in turn, produces radiothorium, which may then be separated in a state of radio-active purity—that is, quite free from thorium. Likewise, if thorium is continually treated to remove the mesothorium as fast as it forms, the production of radiothorium in the thorium is prevented, and in the course of time (more than 20 years would be required for this particular case) the radiothorium originally present in the thorium, and inseparable from it, will decay finally, leaving thorium free from radiothorium.

Except in the case of radium and radium emanation, and the long-lived elements uranium and thorium, quantities of the radio-elements have not been prepared which would permit of accurate atomic weight determinations, and in the case of the greater number of these elements of short life, it is doubtful whether such quantities will ever be obtained. This makes the study of the chemistry of these elements very difficult, and this problem is being attacked in several ways, notably by a study of the electrolytic behavior of the elements, by their behavior in the presence of other ordinary elements (e. g. the great resemblance of radium salts and barium salts would allow us to predict the nature of radium, even if it had not been possible to isolate the salts in a state of high purity, and to demonstrate that radium is a bivalent metal similar to barium), and by a study of their volatility.

Book Reviews.

THE MEDICAL CLINICS OF CHICAGO, May, 1916. Volume I. Number 6. Index Number. Philadelphia and London: W. B. Saunders Company. Baltimore: The Medical Standard Book Co. Paper, \$8 per annum. Published Bi-monthly.

This number of Medical Clinics is of more than usual interest. Dr. Walter W. Hamburger presents an article on "The Allen Treatment of Diabetes," in which he raises the point whether it is advisable to render these patients sugar free by fasting. He says while it has been conclusively proven that diabetes, even of the severest type, may be rendered sugar free by the Allen method,

it will probably take several years to determine whether or not these patients do best in the long run under such conditions. Many chronic diabetes of advancing years continue in active life and in seemingly good health in spite of their having from 0.75 to 1.5 per cent. or more of sugar. You can render such patients sugar free, and keep them sugar free, but if you do, they will of necessity be underweight, will complain of weakness, are easily fatigued and complain of not feeling as well as they did on a more liberal diet. Dr. Hamburger is undoubtedly correct in his deductions. No plan of treatment in chronic disorders should be extolled so highly until given the test of time. At one time there was a craze to reduce the blood pressure in those individuals afflicted with high pressure; today it is thoroughly realized that this cannot be done without entailing in a number of instances danger to the patient, and so in severe edema. These phenomena seem to be provisions of nature to tide the unfortunate victim over chasms, and if interfered with by the doctor often an unfortunate is the price paid. In likewise the status of the Allen treatment in diabetes cannot be accurately determined until it has stood the test of time. Dr. Friedman in an article entitled "Chronic Pain in the Right Iliac Fossa" warns against a too hasty diagnosis of chronic appendicitis. He states that at operation many of the so-called cases of chronic appendicitis do not show on pathological examination of the removed appendix sufficient pathological change to warrant the diagnosis. He states that the cardinal symptoms of appendicitis are history of acute attacks of sharp, colicky pains with absolutely free intervals. Unless a patient gives this history, he is strongly of the opinion we should be leary of a positive diagnosis of chronic appendicitis. It is articles of the type of the two above which have made the Medical Clinics so popular, and justly so. Herein the borderline problems of medicine are discussed and elucidated. The complexity of the problems confronting the internist are discussed by masters of the subject under consideration. Every issue contains a message for the practicing doctor. He will find the regular arrival of these pamphlets a necessity if he once gets into the habit of reading them.

THE INVOLUNTARY NERVOUS SYSTEM. By Walter Holbrook Gaskell, M.A., M.D., F.R.S., Author of "The Origin of Vertebrates," etc. With Colored Figures. New York: Longmans, Green & Co. Cloth, \$1.80 net. 1916.

This book is one of a series of recent physiological advances which proposes to set forth the progress of physiology where the forward movement has been most pronounced. Each monograph will contain an account of our knowledge of some particular branch of physiology, written by one who has himself contributed in greater or less degree to the attainment of our present position.

and so in this monograph Dr. Gaskell has undertaken to elucidate those problems which are governed by the sympathetic nervous system. As Dr. Gaskell made this a life-time study, no one is better prepared to speak with authority. In other words, this book is an epitome of the problems concerned with the innervation of involuntary muscular systems. Herein he presents to his readers a consistent and harmonious account of the plan of innervation of all the involuntary muscular systems in the higher vertebrates, both from a physiological and from a morphological point of view. Besides a discussion of the history of the involuntary nervous system, the author treats of the characteristic motor functions of the nerve cells belonging to the bulbo-sacral, the thoracico-lumbar and esid-brain, outflow of connector nerves, the inhibitory nerves, the rhythmic and peristaltic movements in the involuntary muscles, the innervation of glandular structures, etc., all problems the solution of which would tend to clarify the physiologic atmosphere.

DISEASES OF THE SKIN. By Richard L. Sutton, M.D., Professor of Diseases of the Skin, University of Kansas School of Medicine; Former Chairman of the Dermatological Section of the American Medical Association; Assistant Surgeon United States Navy, Retired; Dermatologist to the Christian Church Hospital. With 693 illustrations and eight colored plates. St. Louis: C. V. Mosby Company. Cloth, \$6.50 net. 1916.

We congratulate the publishers and the author upon the general excellence of this work. The illustrations are excellent and well selected; the typographical work could not be excelled. It is one of the best pieces of craftsmanship that it has been our pleasure to inspect from the publishing-house of C. V. Mosby Company. On the surface it would seem that there was no necessity for any more works on the skin and its affections, but here, as elsewhere, medicine is constantly making strides and adding new information to our knowledge of these afflictions almost daily, so a work bringing this information handily to the general practitioner is a necessity, and it has not been our good fortune to run across a book presenting this information in more concise and sensible plan than here. The possessors will be particularly pleased with the sections devoted to treatment and diagnosis, as it is this phase of dermatology which naturally concerns them most. Another pleasing feature is the lack of repetition and the long array of mooted theories. General practitioners and students are not concerned with what others think; they want in as few words as possible the modern conception of the trouble and the authoritative line of treatment. In these features this book could not be improved upon. Simplicity is the keynote in the presentation of the subject under discussion. This feature should appeal to the reader, be he student or graduate.

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BALTIMORE, JANUARY, 1917

MEDICAL PREPAREDNESS.

The question of the unpreparedness of this country to defend itself against even a second-class power is being forced upon the attention of the citizens and authorities of the nation alike. Until the present colossal and barbaric conflict broke out it was fatuously thought, or at least hoped, that wars were a thing of the past, incompatible with civilization and with Christianity.

It was also believed by many in this country that we were in no danger of attack by any power that could injure us; that our brave and patriotic sons would spring to arms over night and hurl back into the sea any foreign foe that might have the temerity to land upon our shores. "Battleships," in the language of the inland Congressman, "would be built in every creek" and woe betide the adversary who should incur our righteous wrath.

Treaties were supposed to be solemn and irrefrangible covenants that were to be observed to the letter; by means of which the weak were protected and the strong restrained. The oceans that lave our shores were thought to be our greatest protection and to render it almost impossible for a foreign power to invade our land in sufficient force to overcome our citizen soldiery. Our eyes have been opened. The ocean is a ready highway, treaties are "scraps of paper," battleships cannot be built in creeks and armies cannot be raised over night. The country is in great danger and is entirely unprepared to meet it. Not only are we

unprepared to meet force with force, but we are unprepared in every other way.

From a medical standpoint we are equally unprepared. Even on a peace basis the medical corps of the army is insufficient and, even now, during this Mexican fiasco, it has been necessary to call upon the Medical Reserve Corps for assistance. For almost six months the Editor of this Journal has been in active service with General Pershing in Mexico, at a great sacrifice of his private and professional interests.

With the strictly military aspects of the situation we are interested only as are other citizens, but with the medical aspects we are vitally concerned as, in the event of war, the profession in general must answer the call. Is anything being done in the way of preparing for possible emergencies? We may say that a great deal is being done. A strong committee of prominent physicians and surgeons, with Dr. William J. Mayo at its head, is actively engaged in putting the country in a state of medical preparedness by organizing hospital units, by collecting medical and surgical supplies and by enlisting the services of medical men when required.

But more than this is needed in order to meet the emergency successfully and the Committee of Defence has now called upon the medical schools to measure up to the occasion as a patriotic duty. At the recent session of the Southern Surgical Association, held at White Sulphur Springs, W. Va., Dr. Franklin H. Martin of Chicago, practically demanded that the medical colleges, beginning on February 1, 1917, make provision for two hours' instruction daily in military medicine, under army instructors, to the senior classes that will graduate in June next; and that thereafter a carefully arranged curriculum in military medicine be adopted. It will be very difficult to comply with this demand this session. We believe it ought to be done and we think it must be done. The need of medical preparedness we believe to be as urgent as that of military adequacy.

Medical Items.

At the second of a series of lectures on "Public Health," arranged by Johns Hopkins University and the Women's Civic League, Dr. Simon Flexner of the Rockefeller Institute, spoke on "Infantile Paralysis and its Relation to the Public Health," at Mount Vernon Place Methodist Episcopal Church on December 13.

The first lecture was held at Homewood, Johns Hopkins University, in the Civil Engineering Building on December 8. Dr. William H. Park, director of the Bureau of Laboratories, New York City Health Department, spoke on "The Dangers from Impure Milk and the Importance of Milk as a Food." These lectures were open to the public.

DR. JOHN G. SCHWEINSBERG has been appointed health warden of the Twenty-first Ward. He succeeds Dr. Alexander E. Muse, who held the position for a number of years.

DR. AND MRS. WALTER D. WISE are receiving congratulations on the birth of a daughter. They are occupying an apartment at the Walbert this winter.

THERE was a meeting of the Baltimore City Medical Society on December 5 at 1211 Cathedral St. Committee reports were read by Dr. Randolph Winslow, Dr. C. E. Sadtler and Dr. J. Hall Pleasants.

Dr. J. C. Bloodgood made an address on "Recent Observations on Bone Tumor," illustrated with lantern slides.

At the annual meeting of the Baltimore City Medical Society on December 5, at the Medical and Chirurgical Faculty Building on Cathedral St., an election of officers took place. Dr. T. S. Cullen was elected president, Dr. W. T. Watson, vice-president; Dr. Emil Novak, secretary, and Dr. W. S. Gardner, treasurer.

The following were elected delegates to the Medical and Chirurgical Faculty: Drs. Gordon Wilson, T. R. Chambers, F. H. Baetjer, Emil Novak and William Geraghty. Dr. H. B. Stone was chosen as censor.

Dr. Joseph C. Bloodgood addressed the meeting. His topic was "Recent Observations on Bone Tumors." Following Dr. Bloodgood's address there was an informal discussion of

bone tumors, in which Dr. F. H. Baetjer and Dr. A. C. Harrison took part. Dr. Bloodgood's lecture was illustrated with lantern slides.

FROM the sale of the quarantine station to the federal government, \$176,000 was secured by the city, and will be used in erecting a municipal hospital.

THE first scientific session of the American Congress on Internal Medicine took place in New York City on December 28 and 29, following a meeting of the American Association for the Advancement of Science.

BEGINNING with the January, 1917 issue, the Louisville Monthly Journal of Medicine and Surgery will become the official organ of the Mississippi Valley Medical Association, appearing with that issue in new dress and under the name of the Mississippi Valley Medical Journal.

The proceedings of this association have been for years of the highest scientific nature, and the appearance, in full of papers and discussions in convenient form for binding, will enable members and subscribers to preserve these valuable papers.

DR. T. S. CULLEN attended the conference of the Southern Surgical and Gynecological Association at White Sulphur Springs.

THERE was a meeting of the Baltimore City Medical Society on Friday, December 15. Dr. Harvey G. Back, Dr. Lewellys F. Barker and Dr. Thomas R. Brown made addresses.

DR. WAICHIRO OCADO, professor of medicine at the University of Tokyo, who is making a tour of inspection of the hospitals of the United States, visited Baltimore, November 22.

THE research departments of Johns Hopkins Medical School are being transferred to the new Hunterian Laboratory Building, located at the corner of Wolfe and Madison Sts. The building will house the school library and the research laboratories.

DR. OSCAR H. MCNEMAR, Odenton, is under treatment at the Emergency Hospital, Annapolis, for an accidental gun-shot wound of the face, neck and shoulder, received while hunting.

CAPTAIN CLARENCE P. ERKENBRACK, who has been on duty with the First Maryland Regi-

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ment on the border, has resumed his duties as health warden of the Twenty-second Ward.

DR. JOSEPH C. BLOODGOOD delivered an address on "The Prevention of Cancer," at Greenville, S. C., in November.

DR. JOHN STAIGE DAVIS has returned to his home on Cathedral street from White Sulphur Springs, West Virginia, where he attended the convention of Southern surgeons.

AFTER January 1, Dr. Ernest Zueblin will take the directorship of the Tuberculosis Department of the Medical Faculty of the University of Cincinnati.

DR. WILLIAM TARUN announces the removal of his office to 605 Park avenue.

DR. S. T. NOLAND, assistant physician at the Eastern Shore Hospital for the Insane, has tendered his resignation to Dr. Carey, the superintendent, who has accepted it.

Dr. Noland has accepted a position at the Montana State Hospital for the Insane.

It is understood that the position just vacated will be offered to Dr. Aikens of Pennsylvania, who has been connected with the Mercy Hospital of Baltimore.

DR. WILLIAM S. BAER has returned to his home from White Sulphur Springs, where he attended the annual session of the Southern Surgical and Gynecological Society.

DR. JOHN D. BLAKE, Commissioner of Health of Baltimore, is ill at his home from overwork.

AN organization of most of the hospitals of Baltimore to protect themselves against the high cost of living, and to accomplish reforms that they could not do singly, was created at a meeting of representatives of seven hospitals held at Mercy Hospital during the first week in December.

It was called the Hospital Conference Association of Maryland. The following hospitals were represented: Maryland General, University, Mercy, St. Joseph's, St. Agnes, Hebrew and the Union Protestant Infirmary.

The object of the union is to bring about a closer relation and co-operation between hospitals and to take the initiative in bringing about consistent legislation affecting the hospitals throughout the State.

MAJOR J. HARRY ULLRICH, M.C., Field Hospital No. 1, who recently returned from Eagle Pass, Tex., on furlough, was seriously injured a few hours after he arrived in Baltimore, when he was struck by a crank handle while starting his automobile. The cheek bone was depressed, and he received a severe cut across the eye. It was feared at first that his eye had been crushed, but it is now believed that it is not permanently injured.

THE Children's Hospital School, Baltimore, has been closed as a place for the isolation of children afflicted with infantile paralysis, and five of the eight remaining victims of the disease have been returned to their homes. The others, who have not yet sufficiently recovered, will be sent to Sydenham, the city's hospital for infectious and contagious diseases. The contract which the city made with the directors of the Children's Hospital School expired December 1, and was extended for two weeks.

DEATHS.

ADONIRAM J. WOOFER, M.D., Weston, W. Va., College of Physicians and Surgeons, Baltimore, 1882, aged 62; was run over by a train at Weston, September 21, and instantly killed.

CLIFTON MAUPIN FARIS, M.D., Sacramento, Cal., Johns Hopkins University, Baltimore, 1905, aged 38; a Fellow of the American Medical Association; died at his home, November 16, from the effects of a gun-shot wound, self-inflicted, it is believed, with suicidal intent.

HUGH R. GREEN, M.D., Delaplaine, Va., University of Maryland, Baltimore, 1867, aged about 75; died at his home November 4.

OLIERIANNUS ALVIN COVER, M.D., Seymour, Iowa, Baltimore Medical School, 1893; Jefferson Medical College, 1894, aged 54; a Fellow of the American Medical Association, and a member of the Des Moines Medical Society; local surgeon to the Chicago, Milwaukee and St. Paul Railway; while driving over a grade crossing, November 28, was struck by a Rock Island freight train and instantly killed.

WILLIAM LEE SMITH, M.D., Riderwood, Md., College of Physicians and Surgeons, Baltimore, 1887; aged 54; a member of the Medical and Chirurgical Faculty of Maryland and once president of the Baltimore County Medical Association; died at his home, November 28.

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SOME RECENT MEDICAL OBSERVATIONS IN THE EUROPEAN WAR ZONE.*

By J. A. Nydegger, M.D.,

Surgeon, United States Public Health Service.

AFTER a sojourn and travel of some months' duration in the area of European war activities one should not be lacking in some impressions. A few of these impressions—confined to the field of medicine—I will endeavor to recite briefly. Reaching England May 1, and armed with letters of introduction to the heads of various European Red Cross associations, no difficulty and but little delay was experienced in obtaining invitations to visit such military hospitals and similar institutions as was desired, although the great number of these available made it quite impossible always to select the most interesting ones. This early experience, coupled with the fact that during the greater part of the time I was busily engaged in the pursuit of other professional investigations, made it necessary to select certain types of hospitals for study, if one wished to see a variety of cases, to note the methods of treatment and view the classes of hospital buildings and their equipment. First-aid and field hospitals I did not have the opportunity of inspecting, but receiving hospitals, distributing hospitals, general, convalescent and special hospitals were made freely accessible in the countries of England, Ireland, Scotland and France.

The first and perhaps most striking impressions one had, on visiting the wards of one of the large general hospitals, was the preponderatingly large number of wounded being cared for as compared to the number seen suffering solely from diseases strictly medical in nature.

Thus, in some of the hospitals visited fully 90 per cent. of all officers and men were being treated for disabilities of a surgical nature. Judging from the extent of my observations in this respect, as also from the numerous conversations had with medical officers, one would be justified in placing the general average of

*Reprinted from the *Medical Record* New York, August 19, 1916.

the wounded admitted to hospitals at 90 per cent. or above, and the medical cases at 10 per cent. or less. This low admission average of medical cases bears witness in the highest degree to the efficiency of the army sanitarians, in maintaining the soldiers' environment, whether in field, barracks or trenches, in a high sanitary condition, and thereby maintaining the incidents of communicable diseases at the lowest possible figure. In fact, this is one of the marvels of this great war, where we realize for almost the first time in history that medical science has outwitted disease; that the former order of things has been reversed, and that more lives are being destroyed by bullets than by disease.

The types of wounds one saw in hospitals, of course, varied much. Wounds caused by shrapnel greatly predominated. Following these, and perhaps next in frequency, came those caused by machine guns, grenades, infantry rifle, and large projectiles. Shrapnel wounds and compound fractures were seen most. Bayonet wounds are generally fatal, terminating promptly in death, so that I cannot recall having seen a single wound of this nature.

The parts of the body most frequently wounded are the arms, head, neck and lower extremities, although shrapnel wounds of all parts of the body are seen.

I saw one soldier who had 157 wounds caused by shrapnel, and these were all over his body. He had lost one foot and a part of a leg, had a permanently stiffened and contracted arm from lacerated and torn muscles and nerve destruction, still he was anxious to get out of the hospital and again serve his country. I was told of another soldier who had received over 300 shrapnel wounds and had recovered. The most helpless lot of wounded one sees are perhaps those with injuries of the spine and cord, with loss of control of both bowel and bladder, and frequently paralysis of extremities.

For these cases radical treatment so far holds out but little hope, and apparently little was being done beyond keeping them as clean as possible and attempting to make them comfortable. The resort to the use of hand grenades has resulted in the injury and destruction of many eyes. Many eyes have also been destroyed by shrapnel.

I was much impressed with the general results obtained in hospital treatment. The mortality has been low. When one has survived his wound until he reaches a hospital his chances of ultimate recovery, thanks to the skilled treatment and nursing received, are good. I had the opportunity of inspecting the records of a number of the hospitals visited. In one large general hospital with 1300 beds, with an admission of 11,000 cases since the beginning of the war, the mortality was seven-tenths of 1 per cent. from all causes. Another smaller hospital, with some 450 admissions since opening, gave a still lower mortality rate. The death rate in hospitals should be even lower in the future because of the fact that tetanus, which existed among the wounded last fall and winter and caused numerous deaths, has been reduced to a minimum by the

timely administration of antitoxin a short time after the wound is received.

Typhoid fever and dysentery, the scourge of former armies, so far are almost unknown in the West. The protection afforded the troops in the field by the timely administration of the prophylactic vaccine, on the one hand, and the results so far achieved on the other by sanitation are simply marvelous. Rules are rigid; a soldier drinking unsterilized water is court-martialed and punished severely. It has been demonstrated that men can live in trenches for a prolonged period and still maintain good health if but due regard is paid to the warding off of diseases. So far, also, cholera and typhus fever have not reached the western area of the war, although showing a decided increase in parts of eastern Germany, Austro-Hungary and Russia, in spite of all that is being done to prevent their spread. When the time comes, as it doubtless will, when it will be necessary to move large bodies of troops quickly from the east to the west, or vice versa, without first having undergone proper quarantine and without the customary disinfection of clothing and individuals, and these troops occupy trenches and camps hastily vacated by the opposing army and left in unclean and insanitary condition, then will come the grave danger of introducing these diseases among the hitherto healthy soldiers; and this fear on the part of sanitarians was more than once communicated to me while traveling in the war zone. The occurrence of such a condition could only tend to increase greatly the danger of the ultimate introduction of these diseases into the United States.

One method of treatment noted, "the open-air treatment of the wounded," was especially interesting. At Cambridge, England, an asbestos-board pavilion hospital, with wards enclosed only on three sides, with openings protected by louvres for free circulation of air, was erected early in the war.

On the south side the wards had been left entirely open to sun and air, except ordinary sun-blinds hanging from the top; at first the building was designed for a limited number of beds, but the success of the open-air treatment was soon so pronounced that the building was extended to a capacity of over 1200 beds. The hospital is open at every point to the sun and air, the two most powerful allies the surgeon can have in dealing with wounds in war. The wounded are transported there frequently direct from the trenches in northern France. The wounds in many instances are septic, having been soiled with earth and mud, and the organisms are those that flourish most in these surroundings. Therefore they have the peculiar characteristics that they can grow only in the absence of air. These organisms are not those with which the surgeon has usually to deal. It was very soon found that to cover such wounds up deeply and treat them in closed hospitals was fatal to the patient.

A surgeon related to me some of his experiences in handling this class of wounds near the front in the early days of the war. The stench in the wards after a few days was awful. In despair

the unfortunate men were removed, for the sake of the others, to tents outside, as they thought, to die. In 48 hours the wounds had ceased to smell, the surfaces looked cleaner, and, except in a few cases where the organisms were too virulent, the patients recovered. It was thus found that the admission of fresh air to the wounds caused these bacteria to perish rapidly and from a state of appalling sepsis the wound was reduced to one of comparative cleanliness, to the great benefit of the patient. I was shown wounds of this nature which, when admitted to the hospital a short time previously, were septic but had cleaned up in a marvelously short time and were in a healthy condition.

The patients in this hospital also presented a freshness and vigor in their convalescence which are generally absent among those who have been for some time in an ordinary hospital. The pallor and weakness usually noticeable in a man recovering from a serious wound or illness were more or less absent. The conception of the open-air treatment of disease is not a recent one. The idea has of late years been elaborated and practically applied in the adoption of open-air hospitals or sanatoriums for the treatment of tuberculosis, and now the well-thought-out design, equipment and nursing which distinguish the Cambridge hospital, and its adaption for the treatment of the wounded, are distinct advances in the same direction.

The devastating effects of the constant bursting of huge shells over men in the trenches, even when no actual injury is caused by the flying projectiles, is one of the many unexpected results of modern warfare. Although not actually hit, some of those so exposed suffer for a varying length of time from loss of memory, from eye trouble, ranging from blindness to dimness of vision; loss of sense of taste and smell, impaired hearing, and physical upsets. Some never recover, but go on into a marked state of mental decline. Various terms have been applied to this condition, such as "battle shock," "nerve shock," "mental shock," and "wounds of consciousness." Scores of men, both in the ranks and among the officers, while apparently fit to the outward eye, nevertheless suffer in a marked degree from this condition, which perhaps can best be described as "nerve fatigue," as a result of the wear and tear of a war of high explosives. The effects of severe shell fire are very complicated; but it may be said simply that they tend to show themselves in a dazed state which may, on the one hand, be developed with complete unconsciousness or, on the other, lightened till a condition comparable to neurasthenia is observed.

The individual, having passed into this state of lessened control, responds easily to small stimuli; is emotional, at one moment at the height of mental exhilaration and the next in the depths of despair. At night insomnia troubles him, and such sleep as he gets is full of visions of past experiences on the battlefield. The quality of the individual's nerve fibers and nerve cells counts for much when subjected to such strains, and the weaker give way first. The part that heredity plays in these cases is well exempli-

fied. Fully 80 per cent., I was informed, of all of these patients have a neurotic family history. Special hospitals are provided for their care, with quiet, rest, comfortable and cheerful homelike surroundings, with the use of electricity, massage and dieting, and in a few instances psychotherapy.

The effects on the troops of gases when released in large amounts have revealed another demoralizing and destructive agent which the medical officers have to contend with in the present war. Being heavier than air, the gas tends to settle in the trenches and overcomes and kills those who are unfortunate enough to inhale it in sufficient quantity. A favorite way is to discharge it when the direction of the wind is favorable and allow it to be disseminated among the opposing forces in that way. Chlorine gas is the active principle of this gaseous compound, and is very destructive to life. Many are killed outright, while others are rendered unconscious, some to succumb later. The irritation caused by the inhaled gas sets up an intense inflammation of the bronchopulmonary tract, and one is literally drowned in his own secretions. Some of those who survive the first serious effects of the gas are left with a chronic inflammation of the respiratory tract. Those who have fortunately inhaled air but slightly mixed with gas soon recover. I had the opportunity of seeing a limited number of these cases. Protective masks against the gas are now used by the troops.

One still saw in the hospitals soldiers suffering from the results of last winter's exposure in the trenches, such as frostbitten feet. Conservatism in the treatment of these cases has been the rule, and every bit of the extremity that is possible is saved. Another winter should see far less of such injuries to deal with. The trenches of today are places of comparative comfort and luxury as compared to those of last winter. They are now roofed over in many instances, with concrete floors or shelves to stand on, and are drained and properly policed.

The X-ray apparatus plays a valuable part in the military hospital of today. Even the field hospitals are equipped with portable outfits. No military hospital would be considered complete in equipment without such an apparatus. The large hospitals are supplied with elaborate machines, and they have proved invaluable in the armamentarium of the surgeon in fracture work and in the locating of bullets and fragments of shells. The surgeon in war could not work without it.

I was able to visit a considerable number of hospitals of all classes in the United Kingdom and France, and on the whole I found them thoroughly equipped, some luxuriously so, to furnish every aid and comfort to the wounded and sick. Many of the private improvised hospitals are models of perfection in all departments. One of the best of this class in England is that of Mr. Mortimer Singer, an American by birth, at Steventon, near Oxford.

The present war, with the use of high explosive shells, produc-

ing frightful wounds, with great destruction of bone tissue, has developed numerous mechanical appliances for the treatment of these injuries. Of these, perhaps the two first used are the Balkan splint, for leg wounds requiring extension and suspension, and the hip-brace splint, for wounds of the upper arm. The former consists of a firm wood frame about three feet broad and six feet high, extending centrally over the length of the bed. The limb is ingeniously suspended by means of a metal splint, cords, pulleys and weights. This splint first came into use during the Balkan War; hence its name. It has since been improved upon, and is now extensively used.

The hip-brace splint is supported from the hips by metal uprights connected with a covered metallic belt. The upright braces are attached at the top to a metal splint strapped to support the upper arm in a horizontal or inclined and flexed position. This splint is also much in use.

A survey of the hospitals visited showed them on the whole to be well supplied with competent doctors and nurses. In fact, some of the hospitals visited had a surplus of both.

The high explosive type of shells now used, causing extensive shatter of bones, with great destruction of soft tissues, will furnish abundant bone and nerve surgery in the countries involved in war for the next 10 years, and thousands of the wounded and incapacitated will continue as wards of their respective nations for the remainder of their lives.

ON THE EARLY DIAGNOSIS OF GASTRIC CANCER.*

By Julius Friedenwald, M.D.,

Professor of Gastro-enterology, University of Maryland School of Medicine and
College of Physicians and Surgeons, Baltimore.

In a paper published in a recent number of the *New York State Journal of Medicine* I attempted to indicate some of the difficulties encountered in the early recognition of cancer of the stomach. This subject is of such grave moment that I wish to call further attention to the importance of the early diagnosis of this affection. It is a well-recognized fact that unless the diagnosis is made early results of surgery are most disappointing, rarely accomplishing more than relief and never cure. The difficulty arises in the fact that the diagnosis of cancer of the stomach is not a simple matter unless the affection is still in its incipency, at the stage when the greatest help can be obtained from surgical interference, while it

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is usually exceedingly simple when the disease is fully developed, and when but little radical help can be expected from surgery. Yet it is well known that, even though the disease may have assumed considerable proportions, many of the important symptoms may be absent, so that even at this stage a correct diagnosis may at times be impossible.

In analyzing any series of cases of cancer of the stomach, one usually observes that the onset of this affection is sudden in a large proportion of cases, and, excepting in those instances in which the disease has developed from a previous gastric ulcer, that patients are not chronic dyspeptics, and have usually been in good health, with normal digestion, until the onset of this disorder.

This fact is well illustrated in 1000 cases of cancer of my own, in which there was a history of some previous digestive trouble in but 232 cases (23.2 per cent.) Of the 232 cases, 109 had slight attacks of indigestion for a period of five years or more preceding the present gastric disease, while 25 had slight attacks only during the five years preceding the present disease. Of the remaining 123 cases, 32 had chronic indigestion more or less all their lives, of which 29 had chronic indigestion mainly during the five years preceding the present illness. Seventy-three cases gave a definite history of former gastric ulcer. It is, therefore, evident that of these 1000 cases, but 23 per cent. presented histories of previous digestive disturbances, even in the slightest degree, and that but 7.3 per cent. gave direct histories of ulcer, while in 77 per cent. of the cases the onset was sudden and acute. The fact that the onset of this affection is sudden in a large proportion of cases is a sign of great value in the early diagnosis of this disorder.

In our endeavor to arrive at an early diagnosis, the most important signs and symptoms must be taken into consideration. Of these, the following are most characteristic:

1. Loss of flesh.
2. Pain.
3. Anorexia.
4. Vomiting.
5. Dysphagia.
6. Hematemesis.
7. Melena and the presence of occult blood in the stools.
8. The presence of a palpable tumor.
9. Dilatation of the stomach.
10. Ascites and edema of the extremities.
11. Changes in the gastric secretion.
12. Serodiagnosis by Abderhalden and Kelling's methods.
13. Certain röntgenological findings.

I. LOSS OF FLESH.

Loss of flesh is a sign of very considerable importance. It occurred in 98.5 per cent. of our cases, in which there was a loss of flesh of from 5 to 78 pounds. We have observed, however, that 30 per cent. of our cases presented periods of improvement in

weight and in general conditions with an increase in flesh of from 5 to 25 pounds. These periods of improvement occurred in the greatest number of cases from one or two months (that is, in 79 per cent. of all cases) after the beginning of treatment. While, therefore, loss of flesh is a sign of importance as an early sign of cancer, periods of improvement with gain of flesh are not uncommon in the early period of disease, and this should be kept in mind in the early diagnosis of gastric cancer.

2. PAIN.

Of our cases, pain was present in 93.1 per cent.; in 56.1 per cent. of these cases pain extended more or less over the entire abdomen; it was limited to the epigastric region in 22.9 per cent.; in 68 per cent. to the lower abdomen; in 6.2 per cent. to the back, and in 1.1 per cent. to the chest. It was present as an early sign in 84 per cent. of our cases, but because of its variation as to location and extent its diagnostic value as an early sign of gastric cancer is lessened.

3. ANOREXIA.

Anorexia is a very prominent symptom of gastric cancer, and was present in over 89 per cent. of our cases. It varies markedly from a slight loss of appetite to an absolute aversion to food. It was slight in 23 per cent. of our cases, moderate in 30 per cent., and variable in 7 per cent. It is usually a very early symptom, but is present in so many other affections that, unless taken in connection with other signs, it is of but little significance. The aversion for meat, which frequently occurs early in the disease, is of diagnostic importance.

4. VOMITING.

Vomiting is also of frequent occurrence in gastric cancer, appearing in 89 per cent. of our cases, in 67 per cent. of which it was in no way associated with the ingestion of food. This symptom is exceedingly frequent, but presents such slight relationship to food that it can be accorded only minor importance in diagnosis.

5. DYSPHAGIA.

Dysphagia existed in 6.9 per cent. of our cases; that is, in those instances in which the growth involved the cardiac orifice. It appeared as an early sign in 78 per cent. of these cases, and, according to our experience when manifesting itself in patients over 40 years of age, is a sign of great significance.

6. HEMATEMESIS.

Gastric hemorrhage occurred in 22.7 per cent. of our carcinoma cases, of which 88.7 per cent. were multiple and 10.8 per cent. single hemorrhages. It appeared as an early sign in 21 per cent. of these cases, and as a late sign in 79 per cent. The hemorrhages were small in 66.5 per cent., profuse in 27.3 per cent., and variable in 6.1 per cent. of these cases. It was coffee ground in 88.9 per cent. of all the cases with hemorrhages, bright red in 7.9 per cent.,

and variable in 3.1 per cent. Inasmuch as gastric hemorrhage appears early only in a small proportion of cases, this sign can only rarely be relied upon as an early sign of this disease, but when it occurs, especially in the coffee-ground form, it presents additional evidence in the diagnosis.

7. MELENA.

Tar-colored stools appeared in 18.9 per cent. of our cases, much less frequent than hematemesis, but in only a small proportion of these cases did it appear as an early sign (that is, in 14 per cent.), while it appeared late in 86 per cent.

The stools were examined for *occult blood* in 642 of our 1000 cases. A positive reaction was obtained in 92.5 per cent. When occult blood is once observed, it can usually be found at any time afterward. Of the 642 cases, 216 were early cases. Of these, 93 per cent. presented occult blood, indicating that the presence of occult blood is a very constant as well as an early sign of gastric cancer.

8. PRESENCE OF PALPABLE TUMOR.

While the presence of a palpable tumor is the most valuable diagnostic sign of gastric cancer, yet this sign is usually a late manifestation of the disease. According to our observations, in only 30 per cent. of our cases could a mass be palpated within six months after the first appearance of symptoms, while in 70 per cent. it was present only after six months, from which it is evident that the appearance of a palpable mass is over twice as common after the first six months after the first appearance of symptoms than before this period, and cannot, therefore, be relied on as an early sign of this affection.

9. DILATATION OF THE STOMACH.

Dilatation of the stomach due to pyloric stenosis occurred in 47 per cent. of our cases, and this condition, when present early, is of the greatest diagnostic value. It occurred as an early sign in 52 per cent. of our cases of gastric cancer. As Baetjer and I have pointed out recently in our paper, "On the Diagnosis of Incomplete Forms of Pyloric Stenosis by Means of the X-ray," beginning obstructions of the pylorus occur early as partial obstructions, which gradually increase in degree until complete stenosis is produced. Partial obstructions often begin early in the course of the disease, and can usually be easily recognized by means of Röntgen-ray examinations. Partial stenosis, when ulceration can be excluded, is of the greatest significance in the early diagnosis of cancer.

10. ASCITES AND EDEMA OF THE EXTREMITIES.

Ascites or edema appeared in 21.1 per cent. of our cases. Ascites appeared alone without edema in 4.4 per cent.; edema appeared without ascites in 10.4 per cent.; edema and ascites appeared together in 6.3 per cent. Of the 211 cases with ascites or edema, but 24.6 per cent. presented these signs before the first six

months after the appearance of symptoms, while 74.7 per cent. presented these signs after the first six months, indicating that both ascites and edema are late manifestations in gastric cancer.

II. CHANGES IN THE GASTRIC SECRETION.

In 89 per cent. of our cases there was an absence of *free hydrochloric acid*. The absence of free hydrochloric acid is an early sign in many instances, appearing in 81 per cent. of our early cases, and, when taken in conjunction with other symptoms, is a sign of real importance; and yet an absence of hydrochloric acid is so frequently observed in affections other than cancer that this sign loses much of its significance. In this connection it must not be forgotten that after the fiftieth year of age there is a natural tendency to a diminution in the gastric secretion, and that it is not uncommon to observe this condition as a manifestation of old age. There should not be too much stress, therefore, placed upon this finding as an evidence of cancer.

Lactic acid was present in 82 per cent. of our cases. It was present only in any appreciable amount in those instances in which there was a complete absence of free hydrochloric acid. It appeared as an early sign in 76 per cent. of our cases. The diagnosis of cancer is greatly strengthened when, in the absence of free hydrochloric acid, lactic acid is found.

The *Oppler-Boas bacilli* were observed in 79 per cent. of our cases. They were found only in those instances in which lactic acid was observed, and appeared as an early sign in 74 per cent. This finding, when accompanied by the presence of lactic acid and an absence of free hydrochloric acid, is a sign of great diagnostic importance.

Ehrenreich (*Berliner klin. Wochenschrift*, August 17, 1914) has recently called attention to the significant variation in the early secretory functions of the stomach in ulcer and cancer. A determination of this function is of considerable diagnostic importance. This is accomplished by aspirating the fasting stomach, and by determining the quantity of free hydrochloric acid present. Then a test-meal is taken and aspirated in an hour. Similar observations are made and the findings compared. In ulcer the second test always gives a higher content of free hydrochloric acid than is observed in the fasting stomach, or, at any rate, quite as high, while in cancer the reverse is observed. From our personal experience with a small number of cases examined according to this method, it appears that observations into the secretory insufficiency of the stomach are of considerable diagnostic importance in the early recognition of cancer.

We have utilized the *Wolff-Junghans test* in 106 of our cases of gastric cancer. In all of these cases there was an absence of free hydrochloric acid. According to the observations of Wolff and Junghans, the gastric contents in cancer present large quantities of soluble albumin, while in non-malignant achylia but little albumin is obtained. By means of simple dilutions of the contents, and

precipitating the soluble albumin by means of a phosphotungstic hydrochloric acid mixture, the variations in this reaction can readily be observed.

In 89 cases (83.9 per cent.) there was a positive reaction obtained. Of these, 18 were early cases, and the reaction was positive in 13 (72.2 per cent.). This test is an extremely valuable sign when positive in the early diagnosis of gastric cancer, especially when there is an absence of free hydrochloric acid, and when lactic acid is present in the gastric contents.

12. SERODIAGNOSIS BY ABDERHALDEN'S OR KELLING'S METHOD.

Inasmuch as many of the signs and symptoms of gastric cancer are often indefinite and late manifestations of the disease, it has been hoped that serum tests might reveal early evidences when the physical signs are yet indefinite and misleading. It must be remembered, however, in order that conditions favorable for obtaining positive reactions may exist, that the growth must have assumed at least such proportions as to produce a generalized blood reaction with antibodies in the blood.

(a) *Abderhalden's Serum Test*.—My colleague, Dr. Charles E. Simon, has tested this reaction in a number of my cases of gastric carcinoma, and finds that the reaction cannot be considered specific for this disease. This cannot be explained on the basis of faulty technic, as the utmost care was taken in carrying out the test. It may be due to the fact that we are dealing with various cellular types in carcinoma, and that, for instance, a serum from a patient affected with a squamous-celled carcinoma may not react to the serum of one affected with a cylindrical-celled carcinoma. Fulchiero found that in 36 cases of carcinoma there was a positive reaction only in 21 (that is, in 60 per cent.), and that in 45 serum controls in cases of various kinds (not cancer) there was a positive reaction in 5 cases (12.1 per cent.). This indicates that there may be a variation in two directions, as there may be failure to get the reaction in undoubted cases of malignancy, and, on the other hand, there may be obtained a positive result in conditions which are not malignant.

(b) *Kelling's Serum Test*.—Recently Kelling has described a serum test for the diagnosis of carcinoma based on the fact that the serum of patients affected with cancer possessed the property of dissolving the red corpuscles of certain other species, notably the hen. On account of the presence of an inhibiting agent in certain sera and of lysins in certain normal sera, he was unable to utilize the test for diagnostic purposes until the patient's serum was diluted 1 to 10 with normal salt solution, and incubated for 24 hours at 37 degrees C. He then noted the hemolysis after incubating equal parts of the diluted serum in 5 per cent. suspension of hen's corpuscles for 24 to 48 hours. Kelling found that this test gave positive reactions in 90 per cent. of cases of gastric cancer.

Simon has tested this reaction in a number of my cases of gas-

tric cancer, and finds that it is in no way specific of this disease. The reaction occurred in other conditions, and was not present in a number of cases of cancer.

13. CERTAIN RÖNTGENOLOGICAL FINDINGS.

The Röntgen-ray examinations have been of great help in many instances in the diagnosis of gastric cancer. Inasmuch as the largest proportion of cancers have their seat at or around the pylorus, early obstruction is not infrequent. In the early stages of this disease, as we have already pointed out, the obstruction is incomplete, and it is only by means of the X-ray that beginning or partial obstructions of the stomach can be determined. In the early stages of this condition we have active contractions of the stomach, with a slow elimination of the stomach contents. Another very significant sign is the fact that we frequently observe that a portion of the stomach just within the pylorus, on the greater curvature in the pyloric region, shows a tendency to bulge. This condition is produced by the active contractions of the stomach forcing all of the foods toward the pyloric region. The pylorus not being patent, the prepyloric region becomes dilated under this constant pressure, so that the plates present the pylorus not at the end of the stomach, as it were, but the prepyloric region extends farther to the right than the pylorus, the pylorus resting on the top of the stomach and pointing to the splenic region. The prepyloric bulging is dependent largely upon the duration of the affection. In the early stages it is very small, but, as the condition advances, the prepyloric bulging may reach the size of a hen's egg. As the condition advances, dilatation begins to take place, and after a time practically the entire fundus yields, so that typical sac-like formation is produced, and the entire bismuth rests in the bottom of the fundus. In this state the examination will present a retention of contents of from 10 to 20 hours.

The most important X-ray evidence, however, of cancer is a filling defect, which remains constant in all of the plates. When the disease has been present for some time (that is, in advanced cases) the defect is large and very irregular, and there is an absence of peristalsis at this area. In the early cases, however, there is but a slight thickening at the cancer area with weakened peristalsis, which frequently makes the diagnosis exceedingly doubtful or even at times impossible.

While, therefore, the Röntgen-ray examination is exceedingly useful and presents important aid in the diagnosis of gastric cancer, it is of value only in certain instances in the early diagnosis of early cancer.

In drawing our final conclusions concerning the significance of the various signs and symptoms of gastric cancer, it is quite evident that many are general manifestations frequently present in other gastric affections, and not characteristic of this condition alone, while those which are more characteristic are usually late developments. On this account the late diagnosis of cancer is ren-

dered exceedingly simple, while, on the other hand, the early diagnosis is exceedingly difficult.

In reaching definite conclusions it is therefore important to rely not upon a single sign or symptom, for there are no pathognomonic signs of early cancer, and only after a critical review of the history, physical examination, and study of the symptoms, including examination of the gastric contents and stools, can definite conclusions be drawn. We take into the consideration, in our diagnosis, the age of the patient, the history of the affection (that is, its onset in the midst of good health), the anorexia, vomiting, pain, hematemesis, loss of flesh and strength, and early dilatation of the stomach. In addition, we have the evidences afforded by the examination of the gastric contents; that is, the absence of free hydrochloric acid, the presence of lactic acid and of the Oppler-Boas bacilli and blood.

A positive Wolff-Junghans reaction, manifestations of gastric retention, and the persistence of occult blood in the stools are evidences of additional value. But we rarely have all of these signs present in early cancer, and usually these are so few that the diagnosis is impossible.

It is most important, too, to remember that gastric cancer usually appears at the age in which arteriosclerotic changes have already manifested themselves, on account of which there are retrogressive changes and impaired metabolism with loss of strength, with symptoms often akin to those of cancer. There is at this period of life, as I observed some years ago, a tendency even to a diminution of the gastric secretion with an absence of free hydrochloric acid, and this, too, may further complicate the diagnosis. Further difficulties often arise by the occurrence of gastric cancer in patients suffering with some preceding affection, such as diabetes, chronic Bright's disease, cardiac affections, and chronic infections, on account of which there are often marked emaciation, loss of strength, and indigestion; the presence of a carcinoma may, therefore, easily be entirely overlooked. Finally, there still remains another group of cases, known as latent cancers, in which symptoms are not revealed until late in the course of the disease and at times not at all.

Inasmuch as surgery offers the only cure for gastric cancer, and then only when the diagnosis is made early, the question of early diagnosis is of the greatest importance. How can this be made?

As yet it is impossible to reach very definite conclusions at the early stage, except in rare instances. But it behooves us to carefully observe all of our cases of gastric disturbances most critically, and to view with suspicion all patients over 40 years of age who show no improvement after a short course of medical treatment.

Inasmuch, therefore, as our means of early diagnosis of cancer of the stomach are exceedingly insufficient, and until more certain methods of diagnosis are available, exploratory incisions should be urged upon all individuals over 40 years of age having gastric

symptoms which are not relieved after a few weeks of treatment. Especially is this the case if the patient presents a history of rather abrupt onset, some loss of flesh, an absence of free hydrochloric acid in the gastric contents, and occult blood in the stools. As all cancers of the stomach have a latent period at which symptoms are not manifested, it appears to me that our greatest hope in the future for the early recognition of this affection must be centered in some form of sero-diagnosis.

THE CONTROL OF SYPHILIS.*

DISCUSSION IN SYPHILIS SYMPOSIUM, CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS, WASHINGTON, D. C., MAY 9, 1916.

By ISADORE DYER, Ph.B., M.D.,
New Orleans.

A WIDE range for discussion is offered in the topics which have been so ably presented, but it would be difficult to engage all of them with any hope of adding much to the material furnished. With the idea of furthering the sociological feature of the program, some ideas might be presented which may have been overlooked.

In weighing the question of syphilis in its relation to society, meaning in the social economy of all people, there are two points which seem to stand out—the lack of control of syphilis and the effect this has upon those who have not voluntarily contributed to its spread—namely, those who may have acquired syphilis innocently, and those who have escaped it.

Almost the entire attention of those who work with syphilis and of those who write on syphilis has been devoted to the care and cure of syphilis; little has been actually accomplished in its control and its prevention. We may admit that certain eugenic laws have been passed and promulgated with a view to disciplining those who have contracted the disease and that such laws may ultimately have their effect in protecting the children in some future generation, but the enforcement of these laws is going to be difficult and it is not hard to calculate that many will escape by one or another means.

The treatment of syphilis has improved enormously in recent years, and the ability to make exact diagnosis has added materially to the possibilities of cure. Notwithstanding, the attack upon the sources of the disease has not yet been undertaken with sufficient force.

In a review of a large number of general hospitals it was ascertained by the writer that practically all of them refused admission

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to early or incipient cases of syphilis, that the ambulant case was generally not wanted in the hospital, and that all cases of syphilis, as such, were accepted on sufferance. The outdoor clinics everywhere show a great preponderance over the cases of syphilis in indoor service, and, where any statistics could be had, the clinics handle early syphilis almost always without the proper consideration of its danger to the community.

In spite of these facts there are many hospitals which practice routine Wassermann tests for one or another reason, but apparently without any purpose directed at the control or prevention of the disease, so far as the early cases are concerned.

It can be stated as a very safe hypothesis that if every case of syphilis with a chancre or with an early eruption could be promptly hospitalized and treated under compulsion, the disease could be controlled far better than through any system of legislation regulating the report of cases or determining the eligibility of such for marriage.

If enough of those who deal with syphilis could reach this point of view it is rather certain that the hospitals would help, for in the large majority of hospitals approached on this question the very emphatic opinion was derived that the authorities considered the hospitalization of all syphilitics desirable.

There has been a consistent objection on the part of general hospitals to receive incipient cases, some institutions going so far as to exclude such with other acute communicable diseases. If syphilis is to be controlled, however, this viewpoint must change, for a provision for such cases in all general hospitals would offer the most potent means for the control of syphilis. Almost every physician attached to a venereal clinic could accomplish far more in the treatment of syphilis if all early cases were under prompt control.

Private patients with syphilis are more amenable to treatment and advice than those in public practice, but the latter need more regulation.

This phase of the discussion might be dismissed with the formulated propositions:

1. All general hospitals should have special provisions for the indoor care of incipient or acute syphilis, and all men who treat syphilis in public practice should encourage the enforced indoor care of such patients with the object of getting these subjects under prompt control and thereby to minimize the spread of the disease.

2. Legislation should be directed at enforcing the hospitalization of all cases of acute syphilis coming under public charge.

3. Educational movement should encourage the public to recognize syphilis among the communicable diseases, and amenable to isolation, just as are scarlet fever, measles, and other contagious diseases!

The hospital control of syphilis and the methods of diagnosis and care are closely related, and no better means could be had for determining the best procedures than with the continued observation of cases constantly under care.

There is another feature of note in considering a more general hospital provision and care for syphilis, and that is the educational side.

The discovery and wide use of the newer arsenical preparations in the treatment of syphilis has placed in the hands of the medical profession a group of powerful remedies with rather exact relation to the disease. There has not yet elapsed time enough to fix the value of these preparations, and yet the majority of the medical profession has grown to depend upon them in the treatment of the disease.

Former ignorance and timidity in treating syphilis have given place to a degree of rash use of these remedies which has not been wholly justified. Safety first is set aside for a cocksure confidence—often without proper estimate of the end-results.

The medical schools are not teaching syphilis adequately. Most of them confess this in the general discussion which has taken place in the past few years as to how and by whom syphilis should be taught. Most medical colleges leave the instruction of the different faculties as the subject may apply, and there are as yet few schools where syphilis is undertaken as a specific and essential subject.

All the more reason that the student and the physician should have the chance to study the disease at first hand among cases assembled in hospital wards under the direction of men qualified to teach the subject. The accidental or occasional obscure care of syphilis in a general ward offers little; and the transient case in the clinic affords only the casual observation of the disease, certainly not the exact study.

It is too early to argue for special hospitals for syphilis, for the public is not educated enough to see this necessity. This may come as the outgrowth of a more liberal provision in the general hospital and after the demand for accommodation of such patients will make a separate institution mandatory.

The social side of syphilis has many divisions. The study of the relation of syphilis to the economics of the State would lead us into a number of bypaths, including the tax laid by this disease upon the public in the asylums and in the prisons.

The present diagnostic methods, which so readily determine exact cases and which clear up the obscure phases of syphilis, have already established the widespread and hitherto uncalculated hereditary types of the disease, many times wholly unsuspected.

It is here that the argument for syphilis prevention has its greatest force. The subject of syphilis in the innocent is not sufficiently stressed in the usual discussion. This question ramifies

into industrial life, social organization, and involves the community as well as the home. The delinquent school child, or the defective worker of more mature years, may owe the continued obliquity to an unknown antecedent source of this character.

The responsibility of one case of innocent syphilis would be great; multiply such cases, and the possibilities grow.

The enforcement of any law regulating the reporting of venereal diseases, and especially syphilis, will be difficult until there is some beginning with such reports from hospitals which receive such cases and which treat them in indoor or outdoor services. As a rule, a record is made of these cases, and these records are available by the hospital authorities, who can make the proper returns at regular periods. In time, such records may serve a useful purpose in checking up the spread of syphilis.

The report of cases of syphilis in private practice will require more education of both the profession and the laity. The provisions for the regulation of marriage, through forbidding syphilis the license to engage such a contract, have been so far the result of a ferment among health officials of mixed minds. The whole business is of doubtful efficacy so long as the law is arbitrary as at present. The strong conviction among the framers of such laws seems to be that syphilis is an incurable disease.

Gonorrhea is brought under the same ban as syphilis because it is vicious. Cabot has very properly argued that any such legislation should be generally directed at disqualifying the unfit, and that any physical condition, whether due to syphilis, tuberculosis, insanity, or to any other cause, should be considered.

The regulation of such eugenic propositions must bring the full force of the police powers of State health authorities to bear before any actual results can be anticipated.

The State Health Boards have become advisers as well as protectors in sanitary matters. After all, the prevention of marriages among the unfit is only one phase of social hygiene.

If the medical authority in each State were given the right to supply health certificates, covering particularly the diseases which disqualify for marriage, then it would be an easy matter for the State Board of Health, through its medical and laboratory forces, to dispense such certificates after a thorough review of the applicant, including all laboratory tests essential to a proper examination.

Such a method would do away with the objections made by the profession, now so critical of those laws which fix the fee for examinations to determine syphilis.

The State Board not only has the equipment for such examinations, but it has some obligation at the same time.

At this time certain State Boards already offer their laboratories for the proper examination of pathological specimens; in many States the health body makes it compulsory to have examinations made for diphtheria, typhoid, etc.

The additional advantage of a central bureau of record of all

such persons as have had a board examination would make for a more systematic knowledge of the incidence of such diseases, and of syphilis especially.

To leave the certification of the condition of a supposed syphilitic to the average physician, upon his own examination, would soon nullify any law, for no system of report could be assured and no standard test could be enforced.

If State legislation regulating marriage required that all individuals party to such contract, whether man or woman, should file a certificate of the State Board of Health, declaring his or her state of health, and if such legislation provided that the unfit could not be licensed to marry, the syphilitics among other unfit could be barred.

The moral effect of such laws is the greatest after all, for the knowledge of such a requirement would have an early influence in deterring those who might contract diseases, such as syphilis, and it would prevent many who are cognizant that they have or have had syphilis from attempting marriage. The public record of persons with such diseases, too, would largely influence those with disease against marriage. In these respects such legislation would be of large value in the way of prevention.

We are all apt to be hesitant over too radical a step in the regulation or control of syphilis, because in the field of preventive medicine to select one disease among a number which menace society is not truly scientific. The excuse we offer to ourselves is that syphilis is different because it is usually vicious, and, more than that, the very nature of its occurrence under conditions of venereal indulgence has occasioned its spread without the same means of control which might apply to diseases of more innocent origin. The obligation rests upon the medical profession, for with it lies the means of prevention. Until now the physician has taken no part in the moral or sociologic phases of syphilis. He has simply taken the point of view that his duty lay rather in remedying the physical side where he could, and he has left the rest to the patient, to whom the moral question has seldom appealed.

The natural demand of the public has come for the better protection of the future generations.

We may go on devising improved methods of diagnosis and of treatment and cure, and there will probably always be need for such devices. For some years to come we will need to provide for the derelicts in the wake of syphilitic invasion as found among our more and more refined civilization, but the time has come when the control of the incidence and spread of syphilis must be undertaken for the sake of the home and the community as represented by the economical phases of social and industrial life. The generally credited 20 to 25 per cent. morbidity from syphilis in the United States is a grave charge against our morality.

Summary of Results of Examination Held by the Board of Medical Examiners of Maryland, December 12, 13, 14 and 15, 1916.

No.		Anatomy	Surgery	Pathology	Obstetrics	Practice	Chemistry	Materia Medica	Therapeutics	Physiology	Total	Average
	COLLEGE OF GRADUATION.											
1	University of Maryland, '15	78	75	95	92	89	84	90	82	98	783	87
2	University of Toronto, '10	76	82	89	78	83	80	70	98	85	732	81
3	University of Maryland, '14	77	81	80	95	81	90	70	78	81	733	81
4	University of Maryland, '16	83	83	79	82	81	85	94	89	57	733	81
5	Johns Hopkins	82	..	..	..	..	95	89	..	84	..	..
6	Johns Hopkins	86	..	..	..	..	75	82	..	86	..	..
7	University of Maryland, '16	75	..	78	84	..	..	..	..	76	..	..
8	University of Maryland, '16	..	..	..	..	..	..	80	86	..	..	..
9	University of Maryland, '14	75	..	..	..	75	75	..	..	..	..	..
10	Loyola University, Chicago, '16	73	65	75	69	80	66	78	88	81	675	75
11	Johns Hopkins, '15	92	92	92	87	88	80	90	100	90	811	90
12	Johns Hopkins, '15	90	94	95	89	95	85	90	96	92	826	92
13	University of Maryland, '16	87	86	88	77	81	90	80	79	90	758	84
14	Medical-Chirurgical Col., Philadelphia, '16	70	90	87	75	84	80	88	90	85	749	83
15	College Physicians and Surgeons, Balto., '15	69	63	70	79	83	58	82	97	64	665	74
16	Maryland Medical College, '04	52	67	77	88	81	..	..	..	48	..	..
17	University of Maryland, '16	87	74	73	74	77	75	70	90	82	702	78
18	Johns Hopkins, '16	82	90	84	64	76	80	75	75	77	703	78
19	College Physicians and Surgeons, Balto., '15	80	..	82	..	..	..	..	..	85	..	..
20	Johns Hopkins, '16	94	95	92	92	86	90	92	93	97	831	92
21	Johns Hopkins	75	..	..	..	..	85	50	..	78	..	..
22	University of California					Failed to appear.						
23	Maryland Medical College, '12	78	..	76	..	..	..	..	..	..	..	..
24	University of Maryland, '16	46	..	60	..	..	57	..	64	75	..	..
25	Medical College of Virginia, '16	55	90	72	85	89	65	81	91	71	699	78
26	Bennett Medical, '14	51	..	56	..	68	40	..	..	..	..	..
27	Chicago College Med. and Surg., '16	75	75	71	85	80	62	50	63	76	637	71
28	Johns Hopkins, '16	84	91	94	88	93	78	83	100	82	793	88
29	Johns Hopkins	90	..	..	..	..	85	75	..	79	..	..
30	Johns Hopkins	89	..	..	..	..	100	94	..	89	..	..
31	Johns Hopkins	81	..	..	..	..	90	93	..	95	..	..
32	Johns Hopkins, '16	65	76	71	70	80	..	78	..	75	..	..
33	Howard University, '15	75	78	88	84	80	70	70	73	75	693	77
34	University of Maryland, '16	75	..	..	80	75	75	..	..	75	..	..
35	University of Maryland, '16	75	..	79	75	..	..	78	95	..	..	..
36	University of Maryland, '16	71	75	75	76	89	40	69	76	63	634	70
37	University of Maryland, '15	75	..	76	..	85	..	75	..	..	..	..
38	Woman's Medical College, Philadelphia, '14	81	90	95	96	80	75	75	89	87	768	85
39	University of Maryland, '16	81	..	..	..	..	75	..	92	..	..	..
40	University of Maryland, '16					Failed to appear.						
41	Maryland Medical College, '13	30	..	..	..	..	60	..	..	61	..	..
42	Medical College of Virginia, '15	75	..	75	89	..	..	..	..	..	..	..
43	University of Maryland, '16	75	85	75	90	81	65	65	77	72	685	76
44	University of Maryland, '16	55	..	70	72	..	60	76	..	68	..	..

In the above summary an average of 75 is required of those participating in the examination for the first time in order to secure a license. Those who have failed are eligible to re-examination at the expiration of six months. They are then obliged to receive a rating of 75 in each branch in which they are re-examined before license can be issued. Under the Maryland laws, students who, at the end of their second year, have successfully passed their college examination in Anatomy, Chemistry, Materia Medica and Physiology, are entitled to examination by the Board of Medical Examiners in these branches. The ratings made by these students in the examination known as the "second-year examination" are carried forward and made part of the final examination, when an average of 75 must be obtained to secure a license. We trust that this statement will make clear the apparently incomplete examination of certain participants.

REPORT OF BOARD OF MEDICAL EXAMINERS OF MARYLAND.

QUESTIONS AT THE DECEMBER (1916) EXAMINATIONS.

OBSTETRICS AND GYNECOLOGY.

1. What are the uses of the amniotic fluid?
2. Explain how the hemorrhage from the uterus is naturally checked after the expulsion of the placenta.
3. What is "icterus neonatorum," and what are some of its causes?
4. Give treatment of hyperemesis gravidarum.
5. What positions are best for a woman to assume (during labor) who has a slightly contracted pelvis, and why?
6. Give symptoms and treatment of ruptured uterus during labor.
7. How do you conduct a breech presentation at term?
8. Multipara, age 42, eight months pregnant, feet and legs swollen, eyesight failing, twitching of muscles, very marked albuminuria, scanty urine; give diagnosis and treatment.
9. Give symptoms and treatment of right ovarian cyst with twisted pedicle.
10. Give diagnosis and treatment of cervicitis.

SURGERY.

1. Give symptoms, diagnosis, most common cause and treatment of interstitial keratitis.
2. Symptomatology and treatment of acute catarrhal otitis media.
3. Give etiology, symptoms, complications and treatment of hemorrhoids.
4. Give symptoms and treatment of tuberculous disease of hip.
5. What are the symptoms of hydronephrosis? Give causes and treatment.
6. What are the symptoms of chronic luxation of a semilunar cartilage? Give treatment.
7. What are the symptoms of a fracture of the internal condyle of the humerus? Give treatment.
8. Give symptoms, differential diagnosis and curative treatment of hydrocele.
9. What are the symptoms of Potts' fracture? Give treatment.
10. Give differential diagnosis of epithelioma, chancre, and tuberculous ulcer of the tongue.

PRACTICE.

1. Differentiate true angina pectoris from the pseudo form.
2. Give etiology, differential diagnosis and treatment of gastric ulcer.
3. What means would you employ in the diagnosis of diseases of the lungs, liver and stomach?
4. Give symptoms, synonym and treatment of herpes zoster.
5. Name conditions with which uraemia

may be confounded and give differential diagnosis and treatment.

6. Define (a) Tabes dorsalis, (b) Tinea circinata, (c) Hodgkin's disease, (d) Icterus, (e) Tachycardia, (f) Bradycardia.
7. Name the chronic valvular lesions of the heart.
8. Give diagnosis of anterior poliomyelitis, with treatment.
9. What are the most common complications of typhoid fever? Give treatment of each complication named.
10. Name some disease in which purpura is a frequent symptom.

PATHOLOGY.

1. What general scheme would you follow in performing a complete post-mortem examination?
2. How would you prepare a specimen of muscle for microscopic examination?
3. How would you determine the presence of bacteria in the blood?
4. Describe the hookworm, giving life history, and the pathology of hookworm disease.
5. What are the processes that occur in a case of mitral insufficiency ending in death from heart failure?
6. Define chemotaxis, phagocytosis, hypertrophy, hyperplasia.
7. Describe the changes occurring in acute serofibrinous pleurisy ending in natural recovery.
8. Mention the local and systemic lesions which occur in a severe case of diphtheria.
9. Describe amyloid degeneration. Where is it most commonly observed and in what class of cases?
10. Describe the local and remote changes occurring in a case of phlebitis involving the iliac vein.

PHYSIOLOGY.

1. Describe the functions of the thyroids and parathyroids, including a consideration of their removal.
2. Give the properties and functions of the different blood corpuscles.
3. How does bile aid the digestion and what disturbances of digestion result from its absence?
4. What are the functions of the pancreas, and how are these functions carried on?
5. Describe the lymphatic system.
6. Discuss ovulation.
7. Give a general classification of foodstuffs, and give examples of each.
8. Where in the body is each of the following found, and what is the function of each:

Pepsin, trypsin, glycogen, ptyalin, synovia and saliva.

9. What are the essentials for the clotting of blood? Describe the process of coagulation.

10. (a) What portion of the gastro-intestinal tract accomplishes the greatest amount of absorption? (b) What classes of substances are absorbed in the stomach, small and large intestines?

MATERIA MEDICA.

1. (a) Formaldehyde—its preparation. (b) Strength when used locally.

2. Iodine—give source, official preparations and doses.

3. What is meant by incompatibles in medicine? Give two examples and state what evils may result from such in prescriptions.

4. Write a prescription for twelve capsules, each to contain phenacetin, salol and strychnine for an adult.

5. Osgall—the official term, the official preparation and dose. (b) Aloe—the official preparation and doses.

6. Iron—give six official preparations, using official terms, the doses and incompatibles.

7. Give the average adult dose of tinct. aconite; tinct. veratrum; Basham's mixture; dilute nitro-muriatic acid; tinct. nux vomica; Donovan's solution; atropin and codeine sulphate, using official terms.

8. Define fluid extract and tincture, and give five official extracts and tinctures; give doses.

9. Emetin hydrochloride—how prepared, and dose.

10. Write a prescription for an adult containing morph. sulphate and syrup wild cherry, cough mixture for an adult. Write one containing chloral hydrate and bromide of potash. Write one containing sulphate strychnine, arsenious acid, reduced iron, sulph. quinine and gentian—using official terms.

THERAPEUTICS.

1. Write a prescription in Latin, without abbreviation, containing a heart sedative and a diaphoretic, stating the condition for which it is to be used, with directions for administration.

2. State indications for and restrictions in the use of chloride of sodium.

3. Name the special therapy of quinia, dose and period of administration.

4. Name the chlorides of hydrargyrum and their therapy.

5. Write a prescription showing a chemical incompatibility and describe incompatibility.

6. Ergotum, its physiological action and therapy in parturition.

7. State briefly the therapy of nux vomica.

8. Describe the operation of hypodermoclysis and give its therapy.

9. Give the therapy of heat. Of cold.

10. Write a prescription for an adult for twenty pills containing iron, arsenic and

strychnia, stating its use and giving directions for administration.

ANATOMY.

1. Describe the sternum—articulations—muscles.

2. Define synarthrosis, amphiarthrosis, diarthrosis—example of each.

3. Describe the dura mater, mentioning the processes and sinuses.

4. Name accessory nasal sinuses and give location of openings from each into the nose.

5. Describe the thyroid gland, including vascular supply.

6. Liver—gross anatomy.

7. Origin, insertion, action and nerve supply of following muscles: Tibialis anticus; Supinator longus; Deltoid; Obliquus superior, of orbit.

8. The organ of hearing is divided for purposes of description into what parts? Describe one of these parts.

9. Where does the ductus communis cholechus empty?

10. Name (a) Abdominal viscera wholly covered with peritoneum; (b) those partially covered.

CHEMISTRY.

1. (a) Name any two elements which give evidence of strong chemical affinity. (b) Name some other element or elements which present little or no affinity for those mentioned by you in your answer to (a).

2. Describe bromin, and give its most important compounds used in medicine. (b) To what group of elements does it belong and name the other members of that group?

3. Name three (3) soluble sulphates and give the chemical formula of each.

4. Define and give example of a deliquescent salt.

5. (a) What is formaldehyde, and of what practical use is it in general medicine? (b) How is it employed?

6. An individual was found dead of asphyxiation from coal gas. Explain.

7. A physician recently ordered the following prescription:

R Kali Bromidi ($\frac{1}{2}$ dram).

Hydrarg. Chlorid. Mite ($\frac{1}{2}$ dram).

Aquae (3 oz.).

What important chemical change occurred in that mixture?

8. (a) How does cow's milk differ from human milk? (b) Give the general principles governing the feeding of infants by the calorimetric method.

9. What precautions should be taken in testing urine for albumen?

10. A few days ago I withdrew some dark, chocolate-colored material from a patient's stomach, and another patient passed a similar material in the stool. Describe two (2) tests by which I could ascertain whether blood was present in these specimens.

Book Reviews.

STUDIES IN IMMUNIZATION AGAINST TUBERCULOSIS. By Karl von Ruck, M.D., and Silvio von Ruck, M.D. New York: Paul B. Hoeber. Cloth, \$4. 1916.

Tuberculosis is such a widespread scourge that any new measure or measures which offer the possibility of relief should be diligently tried out by the profession before being condemned. All phthisiologists are fully aware of the integrity of the von Rucks and of the character of work which they have been doing. It therefore behooves the profession to pay strict attention to what they have to offer. To say the least, they seem to be on the right tract, and some good should come out of their efforts. The book which they have given us deals with the theoretical considerations underlying immunity, and especially as it is applied to their studies in tuberculosis, practical immunization against tuberculosis, practical results in prophylactic vaccination and experimental studies in the immunization against tuberculosis. They advance the claim that their vaccine answers the trifold purposes, immunization, curative and diagnostic. They also claim that there is something in their vaccine which is lacking in the several vaccines; in other words, that their preparation contains the endogenous toxins of the tubercle bacillus. In order to immunize a person they adduce the argument that these substances must be obtained in a form suited to injection into the human body before any effective immunization against tuberculosis can be expected. For immunizing purposes they also advocate the injection of the maximal dose at a single injection rather than carrying it over an extended length of time. The authors are undoubtedly correct when they state: Every physician who has had much experience in the specific treatment of tuberculosis has had occasion to modify and remodel his views concerning the action of the particular preparation which he employed, its dangers and its clinical benefits. In order to secure a basis for valuable and valid conclusions in this respect it is first necessary to study uncomplicated and purely tuberculous processes as they are met with in the earliest manifestations of the disease. We believe that our observations upon our vaccinated children and adults are, therefore, peculiarly adapted for the study of the question under consideration, and that the early stage closed cases of our clinical material are likewise suitable for this purpose. Since we have seen no harmful, but, as a rule, only beneficial, results following the occurrence of general and focal reactions in a comparatively large number of cases, we believe ourselves justified in the assumption that in this class of cases the contrary must be comparatively rare. In considering the benefits derived from vaccination against tuberculosis by their method they draw their conclusions only from those children and adults whom they had an opportunity of personally examining after periods of a month or more, and who had reacted positively to the administration of the vaccine. These re-examinations were

made at varying periods, ranging from 1 to 42 months. It was not an unusual experience in these closed cases to note almost immediately nutritional improvement as manifested by gain in weight and general well-being, the subsidence of enlarged lymph glands, and oftentimes the disappearance of those physical signs in the chest which made for a positive diagnosis of tuberculosis. They also give explicit directions as to how and in which class of cases to use their vaccine. It is a book which every practitioner of medicine should read carefully and digest the contents, for, if the method of the authors will do one-half what is claimed for it in the hands of the general practitioner, the handling of tuberculosis will be greatly simplified and the mortality therefrom materially reduced.

THE PRACTITIONER'S MEDICAL DICTIONARY. By George M. Gould, A.M., M.D., Author of "An Illustrated Dictionary of Medicine, Biology, and Allied Sciences," "The Student's Medical Dictionary," "Pocket Medical Dictionary," etc. Third Edition. Revised and enlarged. By R. J. E. Scott, M.A., B.C.L., M.D., Fellow of the New York Academy of Medicine; editor of Hughes' "Practice of Medicine," Gould and Pyle's "Cyclopedia of Medicine and Surgery," etc. Philadelphia: P. Blakiston's Son & Co. Cloth, \$2.75 net. 1916.

Those who have need to use Gould's Dictionaries have been more than pleased with them. This, the latest edition, made necessary by the addition of many new terms in medical literature, will give the same satisfaction. It is based on the terms found in recent medical works, and contains all the words and phrases generally used in medicine and the allied sciences, with their proper pronunciation, derivation and definition. More than 70,000 current words and terms have thus been treated, giving to the profession an indispensable, thoroughly reliable and trustworthy lexicon. The price and book being right, it should jump into immediate popularity.

THE CLINICS OF JOHN B. MURPHY, M.D., AT MERCY HOSPITAL, CHICAGO. April, 1916. Bi-monthly. Paper, \$8 per annum. Philadelphia and London: W. B. Saunders Company. Baltimore: The Medical Standard Book Co. Vol. V, No. 2.

This number of the Clinics contains a number of articles of more than passing interest to the surgical specialist. Although there is more or less of a sameness to each number, still one cannot receive too frequently and have impressed upon him too often the character of work being done by a leading exponent of the art of surgery, especially when the information comes in the form of clinical talks. At any rate, this as well as the preceding issues of the Clinics gives one a good insight into the methods used by Dr. Murphy in arriving at a correct diagnosis, and the operative employed in alleviating the infirmity.

MARYLAND MEDICAL JOURNAL

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BALTIMORE, FEBRUARY, 1917

THE MAYO FOUNDATION.

ABOUT two years ago announcement was made of a gift of \$2,000,000, from the Mayo brothers and others connected with their clinic, to the University of Minnesota for post-graduate instruction of qualified medical men who wished to further equip themselves in their professional work. This course was to be taken partly at the University in Minneapolis and partly at Rochester, at the Mayo Clinic. The candidates were required to have had a Bachelor's degree and to be well recommended for appointment. The course of study covers three years, and leads to the degree of Doctor of Science.

There was some opposition to the establishment of this foundation on the part of some members of the profession, but their objections were overruled and the gift was accepted by the university, and the splendid facilities of the Mayo Clinic are now thrown open for systematic post-graduate instruction. That the advantages of this course of study and training are appreciated is shown by the fact that five men have recently been appointed from a Baltimore school to fellowships under this foundation. Dr. P. P. Vinson has been appointed a fellow in medicine and pathology, and Drs. Frederick Rankin, C. C. Hoke, J. C. Brogden and L. A. Buie have received fellowships in surgery. In addition, Dr. E. B. Quillan has been working in diseases of the eye and ear, and Dr. H. C. Irwin has recently severed his connection with St. Mary's Hospital as a clinical assistant after a service of several years.

These are all bright young men who have had sufficient preliminary training to enable them to profit by the instruction, and we

congratulate them on their good fortune in securing these very desirable appointments.

THE MEETING OF REPRESENTATIVES OF MEDICAL SCHOOLS IN WASHINGTON ON JANURAY 6, 1917.

ON the invitation of the Honorable Secretary of War, Newton D. Baker, representatives of over 40 of the most prominent medical colleges met in Washington to confer in regard to the establishment of training in hygiene and military medicine for those students who will graduate next June. Addresses were made by Maj.-Gen. Wm. C. Gorgas, Surgeon-General of the Army; by Admiral Wm. C. Braisted, Surgeon-General of the Navy; by Col. Wm. H. Arthur, Medical Director, Army Medical School, and by Dr. Edward R. Stitt, Medical Director, Naval Medical School, all pointing out the great need of trained medical men in the public services.

Dr. Victor C. Vaughan called attention to the enormous mortality of the Spanish War due to the inefficiency of the medical men hastily drawn from civil pursuits, without knowledge of camp sanitation or of administrative methods, and presented the following resolution:

“Resolved, That it is the sentiment and opinion of every member of the faculties of the medical schools of this country here assembled that universal military training would be of great benefit to the health, development and proficiency of the youth of this land in both peace and war; and, furthermore, be it

Resolved, That we petition the Honorable Secretaries of War and the Navy to supply each of our schools with an instructor in military sanitation and medicine, and that we pledge ourselves to make such instruction obligatory. Furthermore, we recommend that this instruction be provided for beginning not later than February 1, 1917.

This resolution was adopted, as was one still further amplifying the necessity of providing for instruction in training camps as well as in medical schools of civilian practitioners.

At 2 P. M. the members of the convention were received by the Secretaries of War, the Navy and of Agriculture, and were thanked for their interest in the medical preparedness of the country.

Medical Items.

DR. KARL H. VAN NORMAN, formerly assistant superintendent of Johns Hopkins Hospital, has been appointed assistant to the chief of the Canadian hospitals in England, in which the wounded Canadian soldiers are treated. It is an unusual honor for a man so young as Dr. Van Norman. His qualities as an organizer and administrator were made familiar to Baltimoreans during his association with Johns Hopkins.

THE meeting of the Baltimore City Medical Society held Friday, January 5, was devoted to a presentation of a series of short papers by the surgical staff of the Johns Hopkins Hospital. Papers were read by the following doctors: Dr. Walter E. Dandy, Dr. Emil Goetsch, Dr. George J. Heuer, Dr. William S. Halsted and Dr. Joseph I. Lawrence.

DR. JOHN F. HOGAN, formerly superintendent of Sydenham Hospital, became the Second Assistant Commissioner of Health on January 1. Dr. Hogan will have charge of the division of communicable diseases, which will include the work of the health wardens and the department nurses. Health Commissioner Blake has appointed Dr. H. H. Johnson to take his place at Sydenham Hospital.

DR. ROBERT P. BAY, chief surgeon of the Maryland National Guard and one of the best-known younger surgeons of the city, was married on December 23 to Miss Nancy McNabb. Dr. and Mrs. Bay will live at the Walbert Apartments.

DR. G. MILTON LINTHICUM has returned from Eagle Pass and has resumed practice in Baltimore. While in Texas he served as surgeon with the Fourth Maryland Regiment.

A SYMPOSIUM on Labrador and Newfoundland was given December 21 at the Medical and Chirurgical Faculty Building by Dr. John Grieve, chief of staff of the Battle Harbor Hospital, and by Dr. J. M. T. Finney, Jr., and Charles Parson, Colorado Springs; John R. Paul, Philadelphia, and E. M. Hanrahan, Binghamton, N. Y., four students of Johns Hopkins Medical School, who spent last summer at the hospital. The meeting was held under the auspices of the local Grenfell Association in an effort to inspire Baltimore to give

more freely to the medical missionary work of Dr. Wilfred Grenfell.

DR. ARTHUR P. HERRING, secretary of the State Lunacy Commission, has called together a committee which will organize a permanent hospital exchange, where the work of mentally and physically handicapped persons in Maryland will be placed on exhibition and sale. This exchange is believed to be the first of its kind to be established in this country, and will have headquarters in the Levering Hall, as a part of the Charity Alliance's plan to centralize all charity organizations in the city.

By the will of Dr. Holliday Hicks Hayden, Baltimore, his medical library is left to the College of Physicians and Surgeons.

DR. WILLIAM R. GERAGHTY, St. Joseph's Hospital, Baltimore, has been appointed by the Police Board department examiner of women and children, to succeed Dr. Henry J. Walton, Baltimore, who resigned.

DR. GEORGE H. HOCKING, Govans, a member of the State Lunacy Commission, was shot recently and seriously injured by a patient who had suddenly become violently insane.

DR. ERNEST ZUEBLIN, professor of medicine at the University of Maryland, has accepted the directorship of the tuberculosis department of the medical faculty of the University of Cincinnati. Dr. Zueblin is a graduate of the University of Lausanne, Switzerland, having entered the institution after five years' study at Heidelberg and Zurich.

DR. GEORGE WALKER, chairman of the Vice Commission, delivered an address on January 14 to the medical students of Johns Hopkins University in the Hopkins surgical amphitheater on a method to prevent the spread of dangerous diseases among men and women. Dr. Walker told of the findings of the vice survey, and said that a plan was being worked out to prevent the spread of certain diseases, and described work being done in the United States Army, which has proved that they can be controlled. About 125 students attended the lecture.

At a meeting of the managers of the Springfield State Hospital for the Insane steps were taken to obtain better results from the farm on which the institution is located. A special

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committee was named with power to act in securing the services of an expert gardener, to the end that a great part of the fruits and vegetables used in the hospital may be grown there. The hospital now houses 1800 persons.

THE Book and Journal Club of the Medical and Chirurgical Faculty of Maryland held a meeting on Tuesday, January 16, at Osler Hall.

THE regular monthly meeting of the Baltimore County Medical Association was held Wednesday, the 10th of January, at the Medical and Chirurgical Building. The officers for the year were elected.

THE annual meeting of the Baltimore County Medical Association was held January 17 at the Medical and Chirurgical Faculty Building, 1211 Cathedral street. Luncheon was served at two o'clock, followed by the annual address of Dr. J. Carroll Monmonier, president, reports of the secretary and treasurer, and the election of officers. There were also short talks on topics of interest to the association.

DR. A. C. HARRISON, 3 East North avenue, Baltimore, is recovering from an operation for appendicitis at St. Joseph's Hospital, performed by Dr. J. M. T. Finney. Dr. Harrison ranks high in his profession, being a member of many medical and surgical societies. He is a surgeon of several large corporations, is connected with the staffs of Mercy Hospital and St. Joseph's Hospital, and is professor of surgery at the University of Maryland. Despite his numerous activities he finds time to write many papers on medical and surgical subjects.

DR. JOHN T. O'MARA, Baltimore, has been appointed physician to St. Mary's Industrial School, to fill the vacancy caused by the recent death of Dr. Alexander H. Saxton.

A NUMBER of valuable and rare old medical books, the collection of which covered 30 years, have been given to the Johns Hopkins University library by Dr. Henry J. Berkley, clinical professor of psychiatry in the Johns Hopkins Medical School.

DR. CHARLES HORACE MAYO, who shares with his brother, Dr. William James Mayo, an eminence in surgery that is eclipsed by no other surgeon in the United States, visited Mercy Hospital recently with Dr. J. M. T. Finney and watched the latter perform one of the most difficult and dangerous operations ever performed

in that hospital. Dr. Finney removed a section of the transverse colon of a male patient, and there is little doubt that the patient will recover.

DEATHS.

ALEXANDER H. SAXTON, M.D., Baltimore; University of Maryland, Baltimore, 1863; aged 75; attending physician to the Baltimore General Dispensary and physician to St. Mary's Industrial House of the Good Shepherd; for ten years vaccine physician and for eight years pension surgeon; State medical examiner for the Royal Arcanum; died at his home December 24 from heart disease.

WARNER LEWIS, M.D., Wayland, Va.; University of Maryland, Baltimore, 1867; a Confederate veteran; died at his home December 10.

HOLLIDAY H. HAYDEN, M.D., Baltimore; College of Physicians and Surgeons, Baltimore, 1892; aged 47; a Fellow of the American Medical Association; demonstrator of anatomy and clinical medicine in his alma mater; later associate professor of applied anatomy in the University of Maryland; vaccine physician of Baltimore; died at his home December 20.

T. M. CHERRY, M.D., Norton, Va.; College of Physicians and Surgeons, 1891; aged 54; a Fellow of the American Medical Association; a well-known practitioner in southwest Virginia; died at his home December 11 from cerebral hemorrhage.

JAMES LAWRENCE SULLIVAN, M.D., Bridgeport, Conn.; College of Physicians and Surgeons, Baltimore, 1901; aged 42; a member of the Connecticut State Medical Society; died at St. Vincent's Hospital, Bridgeport, August 12, from Hodgkin's disease.

JOSAPHAT A. GAUCHER, M.D., Putman, Conn.; Baltimore Medical School, 1912; aged 26; a Fellow of the American Medical Association; died at his home December 17 from lobar pneumonia.

GEORGE ALBERT BLAIR, M.D., Chambersburg, Pa.; College of Physicians and Surgeons, Baltimore, 1880; aged 58; a specialist on diseases of the eye, ear, nose and throat; who received injuries while riding in a railway car four weeks before; died in the Presbyterian Hospital, Philadelphia, December 6.

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A STUDY OF THE PROBLEM OF THE SO-CALLED DEFECTIVE DELINQUENTS AND WHAT HAS BEEN DONE IN MASSACHUSETTS.

By Dr. L. Vernon Briggs,

Member of the Massachusetts State Board of Insanity, 1913-14, and member and Secretary, 1914-15-16.

WHEN Dr. Herring asked me to read a paper on what Massachusetts is doing for the defective delinquents, at first it seemed to me that I had nothing to say on this subject—that Massachusetts had done practically nothing to settle this very difficult problem. The first step in doing anything efficiently is to decide what one is going to do, and it is this important first stage of accomplishment that Massachusetts is now approaching.

What we are doing for the defective delinquents in Massachusetts (as in other States) is to talk about them. The great mass of citizens have never heard of the defective delinquent, or if they have they have no real understanding of the problem, and if the State is to care properly for these irresponsible charges we must have the support and sympathy of the public.

Even among scientific men I find a great diversity of classifications included under this term—everything from the feeble-minded to the responsible criminal. This paper deals with the class to which the term "defective delinquent" was first applied by the Massachusetts Commission appointed by Governor Draper, under Chapter 59 of the Acts of 1910, "To investigate the question of the increase of criminals, mental defectives, epileptics and degenerates." This commission consisted of:

Dr. Walter E. Fernald, Superintendent Massachusetts School for Feeble-Minded.

Capt. Hollis M. Blackstone, Superintendent State Farm.

Dr. Everett Flood, Superintendent Monson State Hospital.

Mr. Benjamin F. Bridges, Warden Massachusetts State Prison, Charlestown.

Dr. Ernest V. Scribner, Superintendent Worcester State Hospital.

They found in their investigations a class of persons who did *not* come under the classification of the mentally ill, feeble-minded or criminal, but were a group by themselves, and to this group they applied the term "defective delinquents," which classification has been adopted in many parts of this country. Dr. Fernald stated that this term was used as a tentative grouping of cases for further study and classification and to bring them under observation. The term "defective delinquent" may be perhaps more of a legal than a medical term, but Dr. Fernald's idea was to bring the two divergent points—medical and legal—together into a term that would cover each, hence the coining of the term "defective delinquent."

There is a great variation in percentages given in different States in these groups of cases, probably due to lack of uniform terminology or classification. Mr. Frank L. Randall, Prison Commissioner of Massachusetts, wrote a letter to all the wardens in the United States and all persons in charge of schools for juveniles and asked this question: "To what extent do you recognize mental inadequacy and constitutional inferiority among the persons in your charge?" Among *prisons for adults* the range was from 3 out of 240 (in Wyoming) to over 60 per cent. in one prison (Michigan); *State reformatories*, 25 per cent. to 40 per cent.; *juvenile institutions*, from 5 per cent. (Idaho) to 100 per cent. (Iowa)!

The Psychopathic Hospital does not use the term "defective delinquent" at the present time, holding that it is a legal or criminological term rather than medical. According to Dr. Southard, they have at the Psychopathic Hospital, in addition to their epileptic, feeble-minded and psychotic groups, a psychopathic group which contains many cases of what Kraepelin terms "psychopathic personality," but it also includes a good many sex, kleptomaniac, pyromaniac and other monomaniac subjects whom Kraepelin would not put in the "psychopathic personality" group. Southard says, regarding the sex group, that a large number could be safely taken care of in the right environment; they do not seek sex delinquencies; they do not go out after sex experiences, but, to use his term, are the subjects of a "football" environment, and, having no will power to resist, become easy victims to such an environment. Of the epileptic group he says there are a certain number who are epileptoid, or epileptic equivalents, who are often violent in a rather hazy and confused condition of mind, and quite forgetful.

The serious efforts of scientific men to classify and treat the defective delinquent as a separate problem prove that our experts at least are ready for a special institution, and also prove that there is great need of a standardized classification so that they may intelligently discuss the matter and compare statistics. The Binet-Simon, Yerkes and other psychometric tests, taken alone,

are not conclusive, but are only helpful in making a diagnosis in the same way that a blood or urinary examination is helpful in making other diagnoses.

At one or more of our State Hospitals this group is mainly classified under the head of "constitutional inferiors," which term is also used at the Boston Psychopathic Hospital to some extent.

Dr. Guy G. Fernald, resident physician at the Massachusetts Reformatory (for men) at Concord, says the term "defective delinquent," like the term "insane," has a social significance as well as a psychiatric or laboratory significance, and he has recently worked out a new classification, in which he says the members of the defective delinquent class are scattered among the various groups of the segregable, which is as follows:

CROSS-REFERENCE SYLLABUS OF PSYCHOPATHIC DIAGNOSES, MASSACHUSETTS REFORMATORY, CONCORD, 1914-1916.					
Intramural Descriptive Designations.		Grades of Efficiency.			Total.
		Adult.	Subnormal.	Segregable.	
Competent	{ Accidental offender.....	50	1	..	..
	{ Responsible offender.....	347	..	..	398
Deviate	{ Recidivist	..	118	27	145
	{ Psychopath	..	159	22	181
	{ Epileptic	..	16	9	25
	{ Congenital syphilitic.....	..	16	11	27
	{ Sex pervert.....	..	6	10	16
	{ Insane	..	..	10	10
Deficient	{ Moron	..	155	77	232
	{ Imbecile	..	..	3	3
Unclassified		52	17	1	70
Total.....		449	488	170	1107
Percentage rate.....		40.6	44.1	15.3	..
Included	{ Alcohol addict.....	152	239	56	447
	{ Drug addict.....	9	13	4	26

A classification survey, to be of practical value, must show not only who are defective, but in what their defects consist, and this is what Dr. Guy G. Fernald has done in his cross-reference syllabus of psychopathic diagnoses at the Massachusetts Reformatory. In fact, Dr. Guy G. Fernald is to date ahead of any one in certain fields of this problem.

There has been some discussion as to the best time for examining inmates of institutions, especially in the prisons. Dr. Guy G. Fernald does not consider that any of the uniform psychometric tests (to use a term recently revived by Dr. Southard) are of much value in his prison population, but has substituted what he terms a psychonosological* examination, which is more elastic and is an examination for psychic classification for medical treatment. This is not given until just before discharge. His reasons are threefold:

1. Since an actual physical segregation of classes is not possible with the existing physical equipment, there is no need for reaching our "paper" classification earlier.

2. The field investigator's report cannot be in readiness early in the period of incarceration, and the findings of that department are indispensable for the laboratory examination.

*Psychonosological, pertaining to the science of mental classification, a term recently used by Dr. Guy G. Fernald.

3. The social-service purposes of the interview are much better subserved by the later interview than would be the case before the effects of institution life and teaching had had an opportunity to be assimilated by the prisoner. Both plans have been tried, and the one in use is by far the more successful.

Dr. Fernald adds that later, when an actual physical segregation of prisoners may be made following the psychonological examination, the time of that examination will doubtless be advanced to a point earlier in their stay.

There should be no single test, repeatedly used, for examining defective delinquents, or at least the form of the test should be varied. There are today a number of "hospital rounders" who get onto the test, and even get copies of the different papers which are used in the examinations, and become proficient in their answers. Psychologists are now recognizing these self-prepared individuals and are changing the form of questions and spontaneously devising new ones in order to get a fair test, frequently to the surprise of the subject.

There is the same danger in the prisons from a uniform examination, and it has been noted by certain psychologists that after the third or fourth day the mental ages of the prisoners rise rapidly, due to the underground route by which inside information on tests passes current in the underworld with a rapidity almost unbelievable and to such an extent that it soon becomes like other administrative information—stock in trade—for its value in tobacco, etc.

I agree with Mr. Rossy, formerly assistant to our State Board of Insanity, and now conducting a psychological examination of the prison population at Sing Sing, who, in his report to the Massachusetts State Board of Insanity, gives his plan with regard to the psychological work of the State Prison, which is:

1. A psychological examination should be given to every new inmate of the prison. As the men come into the prison they should be referred for a mental examination in the same manner that they are referred for a medical examination.

2. The findings of the psychological examination, together with such history as is necessary for a psychological diagnosis, should be entered in a special card catalogue, which should be available to the prison officials.

3. A psychological examination should be given immediately before any prisoner comes up before the Parole Board. In every case this examination should be supplemented by a thorough study of the history of the subject. This history, as required for aid in diagnosis in the psychological examination, must include the following branches: (a) family, (b) personal, (c) school, (d) social, (e) economic, (f) moral, and (g) medical. A detailed written report should be required of the psychologist on every case coming up before the Parole Board.

In addition, I believe that a psychometric test should be given at the time of discharge of all prisoners, different in form from the one which the subject originally received.

Dr. V. V. Anderson, the medical director of the Municipal Criminal Court of the City of Boston, finds that the term "defective delinquent" is being used by different examiners to define

markedly divergent types, and that "altogether we have presented to us a rather loose and confusing symptomatology connected with the term 'defective delinquent.'" He has therefore divided this group into three classifications:

First—The "mental defective," believing that "defective" used in reference to the mind of an individual should carry with it a lack of normal mental development, and should have a very definite meaning to us that is demonstrable by exact measurements.

Second—"Psychopaths," a group of persons whose intellect is not impaired, but who are impulsive, neurotic and unable to adjust themselves to their environments, all "psychopaths" being cases of constitutional inferiority. The mentality of the psychopath is disordered. The mentality of the mental defective is defective.

Third—"Mental delinquents," a distinctly criminal class, this being a social classification. The acts of this group are anti-social; they are deliberate, and oftentimes well planned and cruel.

The judges of the Municipal Criminal Court refer only such cases to the medical director as are obviously abnormal, either in their appearance, their history or their acts. Of the last 1000 cases referred to Dr. Anderson he has found:

37. per cent. "mental defectives."

8.9 per cent. insane.

10.7 per cent. subnormal (including tubercular cases, epileptics, drug habits and cases of possible constitutional subnormality).

6.9 per cent. "mental delinquents."

17.6 per cent. "psychopaths."

5.1 per cent. alcoholic deterioration.

4. per cent. epileptics.

9.7 per cent. normal.

Showing that 61.5 per cent. of these 1000 patients come under his three classifications of the term usually designated "defective delinquent."

Dr. Anderson reports that a large group of these cases from the Criminal Court are taken care of in the community under probation with more or less success, and that, failing a suitable institution, others are committed as insane, or, if they are at all alcoholic, are sent to the Norfolk State Hospital under the Massachusetts law for two years' commitment for alcoholic cases. Others are sent to the reformatories at Sherborn and Concord, to the industrial schools at Lancaster and Shirley, or to the epileptic colony at Monson. Many are sent to the Psychopathic Hospital for observation.

Now, as to what is being done or has been done in Massachusetts, a most interesting work is now being done for these unfortunates in this Boston Municipal Criminal Court. Judge Bolster has been a powerful factor in obtaining the appointment of Medical Director Dr. V. V. Anderson, and was active in obtaining \$6000 per year from the authorities for a department of medical service. There is a plan now on foot to call Dr. William Healy, of the Juvenile Court of Chicago, to the Juvenile Court of Boston, which now has no medical director for the examination of

these cases. This movement has been started in memory of the late Judge Harvey H. Baker, and most of the money so far subscribed, *i. e.*, \$65,000, has been subscribed by friends and classmates of the late Judge Baker.*

A survey of 400 inmates of the Massachusetts Reformatory for Women at Sherborn was made by Dr. Edith R. Spaulding, but she did not use the term "defective delinquent," so it is difficult to get the percentage of these cases at this institution. She did find about 24 per cent. feeble-minded and about 16 per cent. epileptic, but this latter percentage includes many cases of petit mal, fainting, etc.

Following the report of the "Commission to Investigate the Increase of Criminals, Mental Defectives, Epileptics and Degenerates," of which Dr. Walter E. Fernald was chairman, and on their recommendation, the Legislature passed the following:

CHAPTER 595.

ACTS OF 1911.

An Act to provide for the maintenance at the Reformatory for Women, the Massachusetts Reformatory and the State Farm of departments for defective delinquents.

Be it enacted, etc., as follows:

Section 1. If in any case where a court might, by way of final disposition, commit an offender to the State Prison, the Reformatory for Women, or any jail or house of correction, or to the Massachusetts Reformatory, the State Farm, or to the Industrial School for Boys, the Industrial School for Girls, the Lyman School, any truant school, or the custody of the State Board of Charity, for an offence not punishable by death or imprisonment for life, it shall appear that the offender has committed the offence with which he is charged, is mentally defective, and is not a proper subject for the schools for the feeble-minded, or for commitment as an insane person, the court may commit such offender to a department for defective delinquents, hereinafter established, according to the age and sex of the defendant as hereafter provided.

Section 2. If an offender while under commitment to any of the institutions or to the board named in Section 1 of this act persistently violates the regulations of the institution or board in whose custody the offender is, or conducts himself or herself so indecently or immorally, or otherwise so grossly misbehaves as to render himself or herself an unfit subject for retention in said institution or by said board, and it appears that such offender is mentally defective and is not a proper subject for the schools for the feeble-minded, the physician in attendance at such institution or a physician employed by said board shall make a report thereof to the officer in charge of said institution or to the superintendent of minor wards of said board, who shall transmit the same to one of the judges mentioned in Section 29 of Chapter 504 of the acts of the year 1909. The judge shall make inquiry into the facts, and, if satisfied that the offender is mentally defective and is not a proper subject for the schools for the feeble-minded, shall order the removal of the offender to a department for defective delinquents, hereinafter established, according to the age and sex of the defendant as hereinafter provided.

Section 3. No person shall be committed to a department for defective delinquents under the two preceding sections unless there has been filed with the judge a certificate of the mental defectiveness of such person by

*At the time of going to press this is now an accomplished fact, a sufficient sum of money having been raised to carry on this work and pay Dr. Healy's salary for ten years.

two physicians qualified as provided in Section 32 of Chapter 504 of the acts of the year 1909 and acts in amendment thereof or in addition thereto. The fees of the certifying physicians shall be of the amount and paid in the manner provided for like service in said Chapter 504 and acts in amendment thereof and in addition thereto.

Section 4. If an inmate of a school for the feeble-minded persistently violates the regulations of the school, or conducts himself or herself so indecently or immorally, or so grossly misbehaves as to render himself or herself an unfit subject for retention therein, the officer in charge of the school shall make a report thereof to one of the judges mentioned in Section 29 of said Chapter 504. The judge shall make inquiry into the facts, and, if satisfied that such inmate is not a fit subject for retention in the said school, shall order the removal of the inmate to a department for defective delinquents, hereinafter established, according to the age and sex of the inmate as hereinafter provided.

Section 5. At the Reformatory for Women, the Massachusetts Reformatory and the State Farm there shall be maintained departments to be termed departments for defective delinquents, for the custody of persons committed thereto under this act. All male persons under twenty-one years of age committed under the provisions of this act shall be committed to the department at the Massachusetts Reformatory. Men twenty-one years of age or over committed under this act shall be committed to the department at the State Farm. All women and girls committed under this act shall be committed to the department at the Reformatory for Women. All persons committed to the departments for defective delinquents hereby established at the Reformatory for Women and the Massachusetts Reformatory shall be and remain in the custody of the Board of Prison Commissioners until discharged as hereinafter provided, and all persons committed to the department for defective delinquents hereby established at the State Farm shall be and remain in the custody of the trustees of the State Farm until discharged as hereinafter provided.

Section 6. The Prison Commissioners and the trustees of the State Farm may, respectively, parole inmates of the departments for defective delinquents, herein provided for, at their respective institutions, on such conditions as they deem best, and they may at any time recall to the institution any inmate paroled.

Section 7. Any person may apply at any time to the justice of the district, police or municipal court in whose jurisdiction a department for defective delinquents is located for the discharge of any inmate of said department. A hearing shall thereupon be held by said justice, of which notice shall be given to the applicant and to the person in charge of the institution where the inmate is confined. If after the hearing the justice shall find that it is probable that the inmate can be suffered at large without serious injury to himself or herself, or damage or injury or annoyance to others, the authorities having custody of said inmate shall parole the inmate. Further action on the application for the inmate's discharge shall be suspended for one year from the date of his or her parole. If at the end of said year the justice of the court where the application was filed shall find that said inmate can be suffered to be permanently at large without serious injury to himself or herself, or damage or injury or annoyance to others, the authorities having custody of said inmate shall discharge the inmate. If, at any time prior to the expiration of said year of parole, the justice of the court where the application was filed shall be satisfied that the best interests of said inmate, or of the public, require the recall of the inmate from parole, he may authorize the authorities having custody of the inmate to recall the inmate from parole. If an application is denied, a new application shall not be made within one year after the date of the order denying the previous application. If a person discharged under the provisions of this section is found by any court to have committed, after his discharge, any offence against the laws of the Commonwealth, said court may commit such person to a department for defective delinquents without the certificate of any physician.

Section 8. Any special justice, when holding court at the request of the justice, shall have the powers and perform the duties of the justice under this act. In case of a vacancy in the office of justice and in the case of the illness, absence or other disability of the justice, the special justice who holds the senior commission shall, if no request has been made as aforesaid, have the powers and perform the duties of the justice under this act.

Section 9. The record of all proceedings under this act, and all papers in connection therewith, shall be kept as provided in Section 41 of Chapter 504 of the acts of the year 1909, and the same docket shall be used for the proceedings under this act which is used under said Section 41.

Section 10. All commitments under this act shall be made under an order signed by the judge making the order. Orders for commitment may be served by any person qualified to serve any processes issued from the court in which the justice is making the commitment sits, or, in case of transfers, by any officer or attendant of the institution from which the transfer is being made. The officer or other person serving such order shall make return of service on an attested copy of the order.

Section 11. All the expenses attending all proceedings under this act shall be allowed, certified, and paid in the manner provided in Section 49 of Chapter 504 of the acts of the year 1909 and acts in amendment thereof and in addition thereto.

Section 12. This act shall take effect when the departments named in Section 5 are ready for occupancy. The Prison Commissioners and the trustees of the State Farm shall notify the Governor when said departments are in a suitable condition to receive inmates; and the Governor may then issue his proclamation establishing such departments as places for the custody of defective delinquents.

(Approved June 27, 1911.)

This law was drawn up by the late Judge Baker and provides for the legal recognition and commitment of these irresponsible individuals who are designated as "defective delinquents." The purpose of the law was also to provide that these defective people should not be discharged at the end of their prison sentences to go out into the community to commit other crimes and to reproduce their own kind. That this law has never become effective is due to the fact that Section 5 did not provide any money for the carrying out of the same, therefore, in 1913, a resolve was passed providing \$25,000 to lease and equip a building and support those committed and to pay the expenses of commitment, as follows:

RESOLVE 124.

ACTS OF 1913.

Resolve to authorize the leasing of temporary quarters for defective delinquents.

Resolved, That the Governor and Council are hereby authorized to lease and equip, in the name and behalf of the Commonwealth, for such time and on such terms as they may deem advisable, buildings and grounds for the care of defective delinquents until more permanent provision has been made in accordance with Chapter 595 of the acts of the year 1911. Commitments to the place or places so leased shall be made in accordance with the provisions of said Chapter 595. The expense which may be incurred under the provisions of this resolve, including the cost attending the commitment, custody and support of defective delinquents so committed, to an amount not exceeding \$25,000, shall be allowed and paid out of such of the prison industries funds as the Prison Commissioners, with due regard to preserving the necessary sum to maintain the industries of the institution for which the fund was established, may designate.

(Approved June 13, 1913.)

This again proved ineffective, as the sum of \$25,000 was not enough to build or equip any building available in the State, therefore, at the end of 1913 there was *law* enough to segregate this group if appropriations had been made to properly provide a place in which to segregate them.

On December 17, 1914, the State Board of Insanity, of which I had the honor of being a member, voted to take a census of the defective delinquents in the State hospitals under its control, with the result that on April 1, 1915, there were found in the State hospitals for the mentally ill and the schools for the feeble-minded, 158 defective delinquents who were neither mentally ill nor feeble-minded. This figure probably did not represent the whole number by any means, as many of the inmates of the institutions were in such a mental condition that they could not be tested intelligently, as their defectiveness was complicated with psychoses. It is a well-recognized fact that the "defective delinquent" group are a fertile soil for mental disease.

From the time of my appointment on the board we were frequently receiving requests from different superintendents to transfer from institutions many of these defective delinquents, who were trouble-makers and yet not really mentally ill. The board transferred them from hospital to hospital, which often resulted in temporary benefit to the patients and relief to the institutions from which they were transferred. They were then tried in one of our colony groups by transfer of a certain number from one of our State hospitals, with the result that the superintendent soon asked for a re-transfer of the entire group of the so-called "defective delinquents," with the report that they "were not suitable cases for the colony." The report stated that—

No. 1213—Will not co-operate except for brief periods; continually in trouble; annoys and excites insane patients; obscene and profane at most times.

No. 893—A fair worker; delights in bothering stupid insane patients and teasing excitable ones. Despite efforts of the nurses makes patients very uncomfortable.

No. 893—A very effusive, gushing, sentimental patient, subject to outbreaks of violence.

No. 1226—Sexual pervert; very troublesome; enjoys teasing insane patients, and when on the wards spends most of her time doing so.

No. 970—Excitable, noisy patient, subject to outbreaks of anger on slight provocation; attacks with whatever instrument is handy.

No. 621—Indolent, noisy, profane, obscene patient, who gets along very well if let alone and not asked to work.

No. 954—A good worker, but necessary to keep under most careful supervision, as she constantly seeks opportunities to run away. Judgment is extremely poor; she has many times attempted to leave in inclement weather without proper clothing; breaks glass when irritable.

No. 1131—Patient who is alternately very affectionate and assaulting to patients and nurses. Is usually subject each day to one attack of excitement with little provocation, during which she is noisy and violent.

No. 1216—Patient who does well if handled rightly for periods as long as one month, then is subject to unreasonable outbreaks of temper, during which she threatens to mutilate herself and often to commit suicide. Enjoys making existence miserable for other patients.

No. 890—Patient who is greatly attracted to the opposite sex; needs constant supervision; possessor of tongue that is capable of applying the rudest and harshest epithets to those who have done the most for her. Reluctant to co-operate with plans manifestly for her own good.

No. 613—Patient who does well for periods of months and then is wilful and stubborn; cannot be reasoned with at these times and is childish and irritable. She has had one illegitimate child, and it is still necessary to keep her under strict supervision when men folks are about.

No. 1204—A good worker, but a constant fault-finder; always dissatisfied and believes she is disliked and imposed upon.

No. 898—An indolent, untidy patient, who is eager to join in trouble started by other patients, although she has never been known to deliberately assault anyone. Reluctant to move her chair so that space occupied by it can be swept. Will not co-operate with ward routine.

When these people are committed to the State hospitals they seldom make friends with the mentally ill patients, but associate with nurses when allowed. Life in a State hospital to many of them is congenial, in that they have no work to do; they can talk and loaf and give vent to their unpleasant dispositions by teasing patients and making trouble generally.

If they are sent to the prisons they are sent to schools of crime, and are invariably returned after parole or discharge. They constitute most of the recidivists among our prison population and the most intractable inmates of our reformatories.

Almost every institution has proved to its own satisfaction that it is not able to cope with these individuals, and the one cry is, "Send them to some other institution and not to mine," and this extends to institutions outside the control of the State Board of Insanity, where the feeling is equally strong against receiving them. The superintendents of our State hospitals conscientiously believe that they do not belong in their institutions, and they are right. The superintendents of correctional institutions conscientiously believe that they do not belong in their institutions, and they are right. This class cannot be tolerated in the community, where they add to the ranks of vice, alcoholism, pauperism, prostitution, and every crime, to an extent which has never yet been approximately estimated, hence they *must* become State charges, and so long as the State undertakes their maintenance and custody, why should it not do so in the most humane and efficient manner, which is also the most economic?

It seemed to be up to the State Board of Insanity to solve their problem so far as this class of dependents was concerned, so on December 17, 1914, the board voted to make a survey of the insane prison population under its charge at the Bridgewater State Hospital, which survey was made, with the result that it was found that a certain percentage of inmates were not insane, but came under the "defective delinquent" classification.

The results of the survey at the Bridgewater State Hospital by the State Board of Insanity interested the Massachusetts Prison Commission, who sent the following resolve to the State Board of Insanity:

Resolved, That this board desires to secure a survey of the population of the prisons under its management with a view to determining the mental condition of the prisoners, and that the State Board of Insanity be requested to extend the survey it has undertaken, of the inmates of institutions for the insane, to the prison population.

The State Board of Insanity arranged for two of its assistants, Dr. A. Warren Stearns, a psychiatrist, and Mr. Cecilio S. Rossy, a psychologist, to examine into the prison population of the Massachusetts State Prison at Charlestown. Dr. Stearns examined 100 cases and Mr. Rossy 300, with the following results:

Dr. Stearns found 47 per cent. of his 100 cases with mental defect suggested, and referred these 47 cases to the psychological examiner.

Mr. Rossy found 23 of these cases feeble-minded, of which 2 were imbeciles, 8 low-grade morons and 13 high-grade morons. The 23 feeble-minded he found committable subjects to institutions for mental defectives.

Mr. Rossy found, in his examination of 300 cases, taken alphabetically, 22 per cent. feeble-minded custodial cases; 9.6 per cent. border-line cases; 3.3 per cent. presumably psychotic, to be referred to the psychiatrist.

Following this report the State Board of Insanity decided that something must be done at the earliest possible moment to relieve its own institutions of these undesirable charges. Two men volunteered to take groups of this class for study, to see what could be done for them.

Dr. William T. Hanson, physician in charge of the mental wards, State Infirmary, Tewksbury, was willing to take a group of 50 cases, but could not, for the time being, on account of lack of accommodations. Dr. A. C. Thomas, superintendent of the Foxborough State Hospital, was also willing to take a group of 50 cases, but was somewhat similarly situated. As the Foxborough Hospital, however, was under the control of the State Board of Insanity, it was possible for the board to proceed to prepare accommodations for such a group, and with this end in view they asked and received from the Legislature an appropriation sufficient to renovate several buildings and especially one building at Foxborough, for this purpose. This building is nearly completed, and it is hoped that the transfer will soon be made.

It has been the custom among the institutions usually to place these girls on the violent or excited wards, as one girl will upset a whole ward of quiet and convalescent patients. In the same manner will one of this type also upset a whole class in a school for the feeble-minded and render the work of the instructor futile. As the superintendents have found that when two were placed on a ward they connived and planned escape and mischief, they have usually distributed them one to a ward, with the result that a great many wards were upset or disturbed by their presence.

In a further effort towards solving this problem and relieving the hospitals of the care of these unsuitable patients, the board decided to choose as one of the subjects of the Thirty-fourth Semiannual Conference (which was held at the State House on

November 16, 1915), "Defective Delinquents: In What Institutions Do They Belong, and What Shall Be Their Present and Future Accommodations and Treatment?" Beginning on page 224 of the annual report of the State Board of Insanity for 1915 is the account of this conference and what was offered by those present. At this conference Dr. Guy G. Fernald, resident physician at the Massachusetts Reformatory, read a most interesting paper, which is published in the above-mentioned report. The heads of virtually every institution in the State attended, and many of the trustees, also many of the heads of our departments of State government. Among those present the following either read papers or discussed the problem:

Dr. Michael J. O'Meara, Chairman of the State Board of Insanity.

Hon. Frank L. Randall, Chairman Board of Prison Commissioners.

Hon. John Koren, U. S. Commissioner to the International Prison Congress.

Prof. Robert M. Yerkes, Psychologist, Psychopathic Hospital, and Professor of Psychology, Harvard University.

Mr. Herbert C. Parsons, Trustee Wrentham State School.

Dr. Guy G. Fernald, Resident Physician Massachusetts Reformatory.

Dr. Elmer E. Southard, Pathologist, State Board of Insanity and Director, Psychopathic Hospital.

Mr. Walter Rapp, Chairman Trustees of Medfield State Hospital.

Dr. Walter E. Fernald, Superintendent Massachusetts School for Feeble-Minded.

Dr. V. V. Anderson, Medical Director Municipal Criminal Court, Boston.

Mrs. Jessie D. Hodder, Superintendent Massachusetts Reformatory for Women.

Dr. A. Warren Stearns, Psychiatrist, Assistant to the State Board of Insanity.

Mr. Cecilio S. Rossy, Psychologist, Psychopathic Hospital.

An appeal was made at this meeting by those present for further conferences on this subject, and later the following notice was sent out:

Massachusetts has for some time, through its different commissions, been studying the defective delinquent, or mental defective, with a view to obtaining, if possible, what would be the most satisfactory solution for the care and treatment of this class and for their education or re-education. A great number of them are at present confined in our prisons, jails, houses of correction, reform schools, hospitals for the insane, and in the schools for the feeble-minded, and many of them are in the community, including those on probation from the courts.

From experience it is evident that this class do not belong in any of the above places. It has therefore been proposed that we call a meeting of those interested in the solution of this problem to discuss and formulate some plan which can be mutually agreed upon for the disposition or segregation of this class.

JOHN KOREN,
FRANK L. RANDALL,
EDW. T. HARTMAN,
L. VERNON BRIGGS,
Committee on Arrangements.

In accordance with the above notice a meeting was held, which was again attended by very nearly all the heads of the institutions of Massachusetts—correctional, charitable—and others interested

in this problem, and after free discussion and the reading of many papers (a resume of which would be impossible in this already too lengthy paper) those present voted to authorize the chairman of the meeting, Mr. John Koren, to appoint a committee of ten besides himself to make a further study of the problem of defective delinquents and to bring some recommendations before a future meeting. On this committee Mr. Koren appointed the following, in addition to himself as chairman:

Hon. Frank L. Randall, Chairman Board of Prison Commissioners.

Mr. Hollis M. Blackstone, Superintendent of State Farm, Concord Junction.

Col. C. B. Adams, Superintendent Massachusetts Reformatory (for men).

Mrs. Jessie D. Hodder, Superintendent Massachusetts Reformatory for Women, Sherborn.

Dr. Walter E. Fernald, Superintendent Massachusetts School for Feeble-Minded.

Dr. E. E. Southard, Director of Psychopathic Hospital and Pathologist to State Board of Insanity.

Dr. George M. Kline, Superintendent Danvers State Hospital.

Mr. Edward T. Hartman, Secretary Massachusetts Civic League.

Prof. Thomas N. Carver, Department of Economics, Harvard University, and Trustee Massachusetts School for Feeble-Minded.

Dr. L. Vernon Briggs, Secretary State Board of Insanity.

On December 23, 1915, at the call of the chairman, this committee met, every member being present. A lengthy discussion of the problem was held, and it was voted that a sub-committee of three be appointed by the chair to consider the suggestions of the larger committee which seemed to dominate at this meeting—that Ipswich Jail and the prison camp at Rutland be considered as a starting point for segregating the male defective delinquents, and that new buildings on the grounds of the Massachusetts Reformatory for Women at Sherborn be considered for the female defective delinquents. The chairman appointed on this sub-committee:

Dr. L. Vernon Briggs (chairman).

Hon. Frank L. Randall.

Dr. Ernest B. Emerson (Medical Director of Bridgewater State Hospital for the Criminal Insane).

Owing to the illness of Mr. Randall, Benjamin Loring Young, Esq., former member of the Massachusetts Board of Parole, was added to the committee.

After many conferences and the study of the above and other buildings, no building was found where \$25,000 would cover the necessary cost involved in remodeling and afterwards taking care of this class until further legislation could be passed to provide for their maintenance. The result, therefore, of this committee's deliberations was a bill put forth by Mr. Randall, as follows:

HOUSE BILL NO. 429.

An Act to provide buildings for defective delinquents.

To provide for the establishment of departments for defective delinquents, authorized by Chapter 595 of the acts of the year 1911, the Prison Commissioners are hereby authorized to construct at the Massachusetts Reformatory, or at the Reformatory for Women, such buildings as shall

be needed for the proper care of such delinquents as shall be committed thereto.

If in the opinion of said board it shall be expedient to establish an institution for such delinquents apart from either of said reformatories, and in place of such departments, they may construct said buildings upon land obtained as hereinafter provided. If such buildings are so constructed, the institution shall be known as the Colony for Defective Delinquents, and persons may be committed thereto, held therein and released therefrom in the manner provided in said chapter for the commitment to said department, and for the custody and release of said persons.

For the purpose of carrying out the provisions of this act, said Commissioners, with the approval of the Governor and Council, may purchase or take, in behalf of the Commonwealth, land for said departments or said colony, but the expenditure for land so purchased or taken shall not exceed ——— thousand dollars. The expenditure for the construction and equipment, ready for occupancy, of buildings constructed as aforesaid, shall not exceed ——— thousand dollars. So far as shall be practicable, the work of construction shall be performed by the labor of prisoners held in the Massachusetts Reformatory. There shall be paid to the reformatory, for such labor, such sum as shall be fixed by said Commissioners, with the approval of the Governor and Council.

The plans for buildings to be erected under the provisions of this act shall be subject to the approval of the State Board of Insanity and of the Governor and Council.

The expenditures for carrying out the provisions of this act shall be paid from the prison industries fund.

The above bill was reported upon favorably by the Legislative Committee, after a hearing and the representations of those interested, but when the bill got as far as the Ways and Means Committee it was rejected, on May 5, 1916, nearly at the end of the session, on account of the expense involved.

An attempt is going to be made next winter by those interested, joining with the Prison Commission, in urging the passage of a bill along much the same lines. Mr. Randall has resigned as Prison Commissioner, owing to ill-health. His successor, Col. Cyrus B. Adams, until recently superintendent of the Massachusetts Reformatory at Concord, authorizes me to quote him in saying that he is firmly of the belief that the class of so-called defective delinquents must be segregated in buildings by themselves and there classified into different groups. The same treatment cannot be applied to all, and he says that they must not be connected with or on the grounds of either prison property, insane hospital or reformatory of any kind, and that they should have medical care.

A plan along the following lines, I believe, should eventually be carried out:

A building, or number of buildings, should be erected where this group may be individually studied according to their various medical, educational or re-educational requirements. It should not have any title suggesting hospital or custodial treatment, but might be called a school or training school. It should, however, be under expert medical supervision. The organization should also include one or more psychological and vocational experts and social workers, and a pathologist. There should be well-equipped laboratories, a department where the three R's, ethics and hygiene

are taught, with classes for languages, music, etc.; departments of trades, craftsmanship and domestic arts, where may be taught carpentry, cabinet work, carving, masonry, brick-making, tile and cement work, plumbing, electrical work, shoemaking, tailoring, printing, farming, dressmaking, cooking, canning, preserving, laundry work, etc.; a department of occupational therapy, where a certain small group incapable of continuous effort in any one direction may be employed in various handicrafts, according to their therapeutic needs, such as basketry, weaving, lacemaking, rug braiding and hooking, pottery, etc.

A school of this kind should be able to graduate into the community a number of its pupils each year, who should then be under the supervision of the social worker. There will be many who may never graduate, but every one of these defectives, however anti-social, should be given an opportunity to prepare himself to go out into the world and make good.

There are many who in our judgment, as far as we have progressed, may never be able to take any place in the community, but this does not mean that there is not a large group, maybe a larger group, who are capable of good work, showing marked ability in one direction or another, though it is often misapplied.

The "defectives" are creatures of habit to a great extent. They individually think or act along the same lines; one is always stealing things; another setting fires, another immoral, etc. A careful study of the individual would probably lead to a selection of an occupation or trade as an avenue which would take that person out of chaos into a useful and happy life. Most of them have never had a fair chance. They cannot compete with the normals, and have been knocked from pillar to post, shut up without any intelligent effort being made to direct their energies to something that is more vital to them than even their mischief and misconduct, punished in prison and out of prison because they would not work at what may be most distasteful to them.

Some have undoubtedly been born without any moral responsibility in their make-up, and a very large number have been warped by environment. Is it right to punish these mortals? It may be necessary to give them custodial care, but our responsibility does not end there. To be sure, we should thus have protected the public, but in making a man do a certain stunt or piece of work daily in an institution, we make him into a producing machine, but we may not have done anything for him individually. Surely, in this enlightened age, these handicapped individuals are entitled to as much of our time and effort as our normal children, and we should give them a great deal more if they need it.

But, after all, the trend of all modern work in criminology and psychiatry is becoming preventive rather than merely curative. Steps should be taken and laws passed to prevent an increase in our present defective population through immigration by stopping them at our ports of entry. A careful yearly psychological examination in the schools would detect many of these defective types

before they have become delinquent, and proper measures should immediately be taken for treatment or adjustment to a suitable environment of these early cases.

A great assistance in the preventive work, especially in the early discovery of defectiveness, are and will be the laboratories and the consultations with specialists in the training schools. The laboratories will first scientifically examine the body at large, note the stigmata, and the variations in the relative size of the organs, and with the assistance of the X-ray note especially the size of the heart and pituitary, the bones and their development, estimating the osteological age, and eliminating syphilis, tuberculosis, and especially congenital syphilis, which often can be shown by an X-ray of the bones when other tests are negative. A study of the glands and their secretions, and blood and Wassermann tests should also be made, and psychometric and psychonological examinations and psychological studies, including studies of the emotion and will.

Every State should provide special units for the care and treatment, both educational and medical, of this so-called "defective delinquent" group.

64 Beacon Street, Boston.

THE PREVENTION OF CANCER.

By Joseph Colt Bloodgood, M.D.

INTRODUCTORY NOTE.

Cancer of the lip, tongue, and inside of the mouth is largely preventable. It occurs in smokers and in those with rough teeth who do not take proper care of their mouths. Syphilis is present in a small percentage of cases. The precancerous conditions usually consist in the appearance of one or more white spots or patches or ulcers in the mouth; or, on the lip, of a small black area (burn), or a thickening or warty growth. These commonly produce some pain or discomfort.

If smoking is immediately stopped, the teeth put in order, and if saleratus is used frequently as a mouth-wash the trouble may heal at once. If it does not heal within two or three weeks the diseased area should be cut out by a competent surgeon, who will know whether or not to remove the neighboring glands.

Cancer about the mouth may thus be avoided in most cases by following these simple rules.

Cancer of the skin originates in pre-existing tumors, moles, birthmarks, warts, and scaly, thickened patches (keratosis). These, as a rule, should be removed with a knife or cautery, including a good margin of healthy skin, and the removed tissue should be then examined microscopically. Any local skin defect—as an ulcer, wart, tumor, scaly, thickened patch, or discharging aperture

on the skin—must be regarded as precancerous. It matters little whether the cause be injury, tuberculosis, or syphilis of the skin, or keratosis due to exposure to the sun or lead or arsenic, the possibility of cancer is about the same. If such areas are healed or cut out, cancer may be avoided. Cancer of the skin, therefore, is a preventable disease.

Cancer of the Breast.—Not knowing its cause, we have no means of preventing or treating it until a lump appears in the breast. When such lumps are at once removed on their discovery, half will be found benign (not cancerous). Only 1 per cent. of lumps in the breast are malignant under twenty-five years of age. Every lump in the breast of a female over twenty years should be explored. When benign, its removal will absolutely prevent cancer.

The chances of permanent recovery in true breast cancer—if removed on its discovery—depend upon its kind. If adenocarcinoma, recovery should occur in 96 per cent. of cases; if a cancer cyst, or in the scirrhus or medullary form, 86 per cent. have been permanently cured—providing the growth is removed by the complete operation as soon as discovered. The chances of recovery grow less and less as the delay is more and more protracted until the cancer is incurable from the extent of the local or general involvement (metastasis).

When all the women have this knowledge and seek the physician at once, and when he acts promptly, and the proper surgery is immediately done, the number of deaths from cancer of the breast will be tremendously decreased.

Cancer of the Thyroid.—If, in individuals over twenty, every irregular lump of the thyroid gland (situated directly below the "Adam's apple" in the throat) was removed as soon as found, cancer in this region would be practically unknown. Cancer here begins as a benign growth, and if removed before the surrounding parts are involved, general or local recurrence will not occur.

Sarcoma of Soft Parts.—Lumps under the skin in all parts of the body should be removed, as it is impossible to tell the benign from the malignant. No harm is done by removing benign growths and there will never be a better time to remove sarcomata. Surgery must be thorough and the growth must be removed surrounded by a wide margin of healthy tissue—not merely shelled out.

Sarcoma of Bone.—Early intervention offers the only hope of cure. Pain at one point in a bone or joint, especially after injury (continuous or at a later date), demands X-ray, blood, and urine examination. In my experience the first thing to be done is that done last and too late for the cure of malignant disease of bone or joint.

Cancer of the womb is largely preventable. The majority of cases begin at the outlet (cervix) in women who have borne children. Every woman should keep a careful watch and record

of the character and periods of menstruation, and on observing anything unusual, should submit to a careful examination. The reappearance of bleeding after the change of life is a message requiring immediate attention. Doctors may also prevent cancer of the womb by better obstetrics, by careful examination of women after childbirth, by early repair of lacerations, by correcting displacements and endometritis—thus avoiding precancerous conditions.

Cancer of the Stomach.—If it is true that a large percentage of cancers of the stomach develop on pre-existing ulcer, then it is a preventable disease. Ulcer of the stomach is regarded by patients as “indigestion” and does not receive early expert attention, and many doctors begin with treatment instead of thorough examination. I believe the best treatment in simple gastric ulcer consists in prolonged rest and a semi-starvation diet.

Cancer of the Colon (Large Intestine).—This may not be a preventable disease, but if recognized and removed early, it is one of the most curable forms of cancer. In the left colon acute obstruction leads to early intervention, but in the right colon the fluid contents do not favor obstruction, and discovery of cancer is late. However, patients do have symptoms for months and years before obstruction, and widespread growth occurs, and proper examination in this period will bring out indications for operation.

Cancer of the Rectum and Lower Bowel (Sigmoid).—The early discovery of this condition rests largely with the doctor in making an examination by finger or instrument (proctoscope) because, as a rule, the patient seeks advice early.

Many types of cancer are preventable and most malignant growths may be recognized early. In this period surgery offers a large probability of permanent cure. The difficult problem is how to convey the information to millions instead of hundreds, and how to get them to act on this information. A book of this character will have a large influence for good—especially among the reading public and profession. My own intensive study of the educational propaganda has forced me to conclude that the individual doctor is, on the whole, the best medium for spreading this knowledge. He should feel that it is part of his professional duty to educate all individuals who seek his advice about personal hygiene, and should give them that information which will allow them to recognize possible diseases early.

DO YOU KNOW THAT—

Efficiency decreases as fatigue increases?

The full pay envelope is the great enemy of tuberculosis?

A reliable disinfectant which may be made for fifty cents per gallon has been devised by the U. S. Public Health Service?

The maintenance of health is the first duty of the patriotic American?

TUBERCULOSIS AND ITS CAUSES.*

By Henrietta E. Knorr, R.N.,

Superintendent of Nurses, Baltimore City Health Department.

THERE is so much to be said about tuberculosis that little can be told in one talk, but, doubtless, you already know many things concerning this disease, so I shall touch on just a few things pertaining to it.

Tuberculosis is caused by the bacillus tuberculosis, which is found in man, herbivorous animals, birds, fish and reptiles, and may be transmitted to man from any of these sources. It is, however, transmitted mainly from one human to another. Dis-semination occurs from man to man through the ejection of bacilli during the sneezing or coughing of a person affected; germs are rarely distributed during ordinary breathing. Children have been known to contract the disease through drinking milk of infected cattle, and isolated cases occur of transmission through infected meat.

The severity of an attack of tuberculosis is influenced by the dose and virulence of the bacilli taken into the body, and depends upon the resistance to disease of the person infected. Resistance lowering factors are: all chronic diseases, such as diabetes, etc.; acute infectious diseases, such as whooping-cough, measles, pneumonia, typhoid, etc. Common colds, alcoholism and overwork are also resistance lowering factors.

Tuberculosis is a disease of poverty. Overcrowding, extremes of temperature and lack of ventilation, plus dirt and darkness, all associated with poverty, are mighty contributing causes. Being decidedly an indoor disease—its cure, fresh air, rest and good food—a tremendous responsibility rests upon employers to provide well ventilated, hygienic surroundings for their employes, with a short time for rest during working hours and an adequate wage, so that proper food may be had.

We are often asked if tuberculosis is hereditary; scientists have shown that it is not. However, it is claimed that a pre-disposition to the disease may be handed down, children of tuberculous parents usually being weaker than those born of healthy parents. Certain peculiarities of physique may also be handed down which pre-dispose to tuberculosis, such as slenderness and narrow chests.

Though not hereditary, it has been demonstrated that from 85 to 95 per cent. of children under 13 years of age are infected with tuberculosis. This does not mean that the disease is active, but that at some time the child has had tuberculosis, perhaps such a mild attack that it was not recognized as such. With good care and under normal conditions, these infections may not have any

*Address delivered at the quarterly meeting of the St. Vincent de Paul Society, Baltimore, Md., March 13, 1916.

serious consequences. When resistance is lowered by overwork or disease, the old infection may light up and become an active case of tuberculosis.

The first step in combating the disease is the discovery of cases. Physicians register each case found with the State Board of Health, and frequently refer such cases to the Tuberculosis Nurses' Division of the City Health Department. The nurse visits and instructs the patient, under the doctor's direction. Frequently cases are found by nurses and are referred by them to the patient's attending physician for advice, or to a dispensary, as the case may require. There is no reason why the very poorest person should not have the very best attention. For those unable to pay a physician's fee, dispensaries are provided by the city—three such are now in operation and a fourth is under consideration. In addition to the municipal dispensaries, there is one supported by the University of Maryland and the Phipps Dispensary at Johns Hopkins. The Health Department laboratory assists physicians by making examinations of sputum.

The second step in combating the disease is the care of cases. We have several excellent sanatoria for white patients. There is, however, always a waiting list, and the time a patient may remain at a sanatorium is limited.

For 562 colored people needing sanatorium care we have only 45 beds at our disposal. As a rule, the negro is poor and ignorant, lives under unhygienic conditions, and proper care is almost impossible. We instruct him to admit to his dwelling all the sunlight and air possible, when sometimes the street is so narrow and the house so miserably built and situated that the sun rarely reaches it. Until our housing conditions are improved, it is safe to state that no progress can be made in combating tuberculosis among negroes. The Health Department has a chart showing the decrease of tuberculosis in various cities; in many this decrease can be attributed to better housing conditions.

The nursing care of cases is of two kinds: firstly, preventative work, being advice and instruction given under the attending physician's orders; secondly, the actual nursing of advanced cases in their homes. The nurse is often a valuable aid to the physician in discovering early cases. She is capable of recognizing early symptoms and persuades those whom she visits to consult a physician often much earlier than they would go of their own accord. Her instruction prevents minor ailments in other members of the families which she visits. The nurse also arranges for fumigation of premises upon the death or removal of a patient, and inspects afterwards to see that all measures have been taken to insure the safety of the next occupant of the room or house. Where food, clothing or other social relief is necessary, cases are referred to the proper relief giving organizations. Often more suitable occupations are found for patients.

A recent development in combating tuberculosis is the establishment of open-air classes. Pre-tuberculosis children are ad-

mitted to these classes, and show remarkable gain in both scholarship and health. If children subnormal in health show gain in scholarship in open-air classes, it would seem profitable to have all schools open-air schools. Only 25 beds are provided for sanatorium treatment of cases of tuberculosis among children. Could we not utilize to splendid advantage our parks for the establishment of day camps where active cases of tuberculosis among children could be cared for?

While I am speaking of the work of the nurses of the Health Department, I should like to include a few words concerning the work of the school nurses. Ten nurses assist five physicians in examining children in the public and parochial schools of Baltimore. Cases needing special attention are visited in their homes. Where parents are unable to provide proper medical or surgical care, children are taken to dispensaries by the nurses. Parents are advised concerning proper diet, etc., for children. Considering every branch of nursing work, school nursing really seems to be the most important, for if, as we are told, from 85 to 95 per cent. of children react to tests for tuberculosis, surely by taking proper care of the children many cases in later life could be avoided.

Another department of nursing recently established by the Municipal Health Department is that of communicable disease nursing. Only three nurses are in this field, and their activities are confined chiefly to investigation and to seeing that the proper methods of quarantine are observed. Where nursing care is absolutely necessary, this also is given.

We should be glad to have brought to our attention any cases in which we could be of assistance to the physician and to the family. Any of these branches of nursing service may be reached at the Department of Health, 311 Courtland street.

Book Reviews.

SKIN CANCER. By Henry H. Hazen, A.B., M.D., Professor of Dermatology in the Medical Department of Georgetown University; Professor of Dermatology in the Medical Department of Howard University; Sometime Assistant in Dermatology in the Johns Hopkins University; Member of the American Dermatological Association. With 97 text illustrations and one colored frontispiece. St. Louis: C. V. Mosby Company. Cloth, \$4 net. 1916.

Owing to the frequency of malignancy of the skin and the apparently chaotic status of the subject, the appearance of this book is indeed opportune, as it should exert a powerful influence in clearing up the diagnostic and therapeutic haze surrounding the whole subject. It is well known that malignancy of the skin is of various grades of severity, but from a superficial examina-

tion one cannot tell what tumor belongs to this class. Again, sometimes it is impossible by ocular inspection to determine whether a given growth is cancerous or not; but, as the author states, it is an easy matter to secure a section from these growths and submit it to the test of the microscope. Certainly in every person over middle age a chronic growth should be looked on suspiciously and given the acid test of the microscope. It is a very important monograph, and should, and no doubt will, serve to direct the attention of the profession to a group of diseases heretofore looked upon with but little interest.

THE MORTALITY FROM CANCER THROUGHOUT THE WORLD. By Frederick L. Hoffman, LL.D., F.S.S., F.A.S.A., Statistician the Prudential Insurance Co. of America; Chairman Committee on Statistics, American Society for the Control of Cancer; Member American Association for Cancer Research; Associate Fellow American Medical Association; Associate Member American Academy of Medicine, etc. Newark, N. J.: The Prudential Press. 1915.

In view of the fact that cancer is the third most important cause of death in males 45 or over, any investigation which will tend to lessening this appalling mortality should be diligently pursued by the medical profession, and any means toward controlling the ever-increasing death rate assiduously cultivated. From the figures made available by the Prudential Life Insurance Co., out of 5529 deaths from all causes during 1914, 416 deaths, or 7.5 per cent., were from malignant disease. There are now more than 80,000 deaths in the continental United States annually from malignancy, and, according to statistics, as the disease is increasing at the approximate rate of $2\frac{1}{2}$ per cent. per annum, the problem is indeed becoming a grave one, as within a comparatively short time there will be more than 100,000 deaths annually from cancer. The present work is intended to facilitate the study of the cancer problem throughout the world, incorporating as it does much material available only in the Prudential library and data from the Federal Government and the several States and many foreign governments, thus releasing for the first time much new knowledge concerning this problem. The main results of the investigation as set forth by the book is a warning that cancer is much more prevalent throughout the civilized world than has generally been assumed to be the case, and that malignancy, instead of showing a decline in the death rate, is one of the few diseases which is actually on the increase. This being the case, the author is of the decided opinion that there is imperative need of uniformity in the rules of statistical practice and the adoption of standard forms and blanks for cancer inquiries. Such an improvement can only come about by the co-operation of all who are interested in cancer research. Until this occurs, the present work will serve the purpose of making the existing statistical facts of cancer available in convenient form.

MARYLAND MEDICAL JOURNAL

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BALTIMORE, MARCH, 1917

THE DIFFERENTIATION OF PAIN IN THE ABDOMEN.

THE Baltimore City Medical Society was privileged to listen to an able and instructive address on the above-mentioned topic by Dr. John B. Deaver on February 16, 1917. The subject was a timely one, and while he did not say much that was new, his individuality, his peculiarly forceful diction and his emphatic gestures served to impress the truth of his remarks upon his audience. He called pain a "good angel," inasmuch as it gave a signal of serious trouble within, which if rightly interpreted and properly treated usually leads to cure, but if neglected frequently terminates in disaster. The demand of the patient for relief from the pain by the administration of morphia is an insistent one, but it should not be yielded to for fear of masking the symptoms and of postponing the operation to a less favorable time. The writer believes, however, that if the diagnosis has been made and an operation agreed to, there is no advantage to be gained by allowing the patient to continue to suffer pain. The causes of abdominal pain are both extrinsic and intrinsic, and one should carefully differentiate between them. The extrinsic causes are pneumonia, diaphragmatic pleurisy, angina pectoris, disease of the spinal cord and of the spinal column, such as the abdominal crises of tabes, and tumors and diseases of the vertebrae. These do not constitute all the extrinsic causes, but at least are the more common ones, which should come in mind when one is in doubt as to the origin of the pain. Mistakes are not infrequently made in the diagnosis of the cause of the pain in these cases, and unnecessary and even harmful operations are sometimes undertaken in an attempt to cure them. The intrinsic causes are too numerous to

mention in detail in an article like this. They embrace the affections of the various intra-abdominal viscera, such as gall-stones, ulcers of the stomach and duodenum, abscesses, pancreatitis, intestinal obstruction, peritonitis and appendicitis. A diagnostic sign of appendicitis of marked value is to request the patient to cough. First tell the patient to take a long breath, which usually causes discomfort, then request him to cough, which causes severe pain, and "then the knife." The subsidence of pain is usually taken by the family as a favorable indication, while it is often an indication of a gangrenous or ruptured appendix. Perforated gastric and duodenal ulcers usually follow a prolonged period of distress in the upper abdomen, but when perforation occurs the pain is intense, first in the epigastrium and then in the region of the appendix, with a board-like hardness of the belly, and often with marked collapse at first.

Gall-stones may at times be mistaken for appendicitis, and appendicitis for gall-stones, but usually the pain from gall-stones is located in the right hypochondrium or epigastrium, and pressure in these regions elicits tenderness over the gall-bladder or common duct. Sometimes the tip of the appendix is turned up toward the liver, and then there may be difficulty in making a diagnosis without an incision.

The pain of intestinal obstruction is cutting in character, and is accompanied by tormina and distention of the coils of intestines, vomiting and obstipation. In peritonitis there is pain, tenderness, distention and rigidity of the abdomen, with fever, rapid thready pulse, vomiting and constipation, but with no peristalsis; "the silent abdomen."

Dr. Deaver does not believe much in the diagnosis of "ptomaine poisoning," which he says is a very uncommon occurrence, and that the cases of supposed ptomaine poisoning are, in fact, due to other causes. Nor does he leave us much comfort in the supposition that pain is due to an old-fashioned belly-ache, which he also relegates to the junk pile.

Dr. Finney, in discussing this paper, confined his remarks chiefly to the question of the cause of abdominal pain, and said that while the intestine is insensitive, any traction on the mesentery causes pain; hence when a distention occurs there is a dragging on the mesentery, with the production of pain.

Dr. R. Winslow limited his remarks to the significance of pain

in the right iliac fossa in young women. He said that in acute inflammatory attacks there were other conditions than appendicitis that could be the cause of the symptoms, such as an abdominal crisis due to a Meckel's diverticulum, but especially acute salpingitis. In colored girls it was best to consider a pain in the right side as being due to a gonorrheal tubal inflammation rather than to appendicitis, unless a careful examination shows the absence of pelvic disease. In chronic conditions, with pain and tenderness in the right side, but with little or no muscular rigidity, the trouble was usually not due to appendicitis. In seven such cases he had operated and had found ovarian tumors; but in most of these cases there is an enteroptosis. Undoubtedly strictures of the ureters and ureteral calculi were responsible for some of these cases also. He was therefore led to believe that unless the symptoms of appendicitis were frank and typical in young women, the condition was probably not appendicitis.

Dr. Harrison, who had recently been operated on for appendicitis, closed the discussion from the standpoint of the patient.

DR. JOHN WESLEY CHAMBERS.

IN the death of Dr. John Wesley Chambers the medical profession of Baltimore has lost one of its distinguished members as well as a person of unique personality. Coming to this city a poor boy and a stranger, with a meager general education, by force of ability and industry, combined with a geniality and kindliness of disposition, he rapidly forged to the front, and for many years had been one of the most prominent physicians in the city and State. He was a surgeon of wide experience, combining dexterity with boldness, though not with temerity. He was also a physician of exceptional attainments, especially in the line of nervous disorders. Though he was best known as a surgeon, he was also held in high regard by a large clientele as a practitioner of medicine. He was also a public-spirited citizen, who took an active interest in the various movements for the betterment of conditions in this community. For some years he had been obliged to curtail his work on account of impaired health, but his sudden death came as a shock to his numerous friends both in and outside of the profession.

Medical Items.

DR. HOWARD A. KELLY, who has been ill for some time at Kissimmee, Fla., is slowly improving.

AS A result of the failure of the last Legislature to provide funds for the erection of buildings at the State hospitals for the care of the insane, the City Detention Hospital for the Insane at Bayview will be overfilled at the end of the year. There are now 268 insane patients at the institution as compared with 139 a year ago. The Legislature voted in favor of State care of all indigent insane in Maryland, but the last Legislature failed to provide for new buildings.

DR. E. H. GAITHER has been elected to the staff of Franklin Square Hospital, and will treat diseases of the stomach. After graduating from the Baltimore Medical College he continued his studies in Berlin, after which he did special work at Johns Hopkins Hospital. Dr. Dwight D. Mohr has been appointed to take charge of the medical work at Franklin Square Hospital in place of the late Dr. Kintzing.

DR. IRVIN M. WERTZ of Hagerstown was severely injured recently when a taxicab in which he was riding collided with a delivery truck.

DR. GEORGE H. HOCKING, who was recently shot by a demented patient, is slowly improving, and will soon leave for New York to recuperate.

At the meeting of the Baltimore City Medical Society held on February 2, addresses were made by the following men: Dr. Gordon Wilson, Dr. Clarence J. Grieves, D.D.S., Dr. George W. Mitchell and Dr. A. B. Rytina.

DR. JOHN C. HEMMETER of the University of Maryland addressed the National Capital Medical Association in Washington on February 6 on the "Role of Calcium in the Economy of the Human Body." He demonstrated that calcium salts are indispensable to the work of most all internal organs and that the average human diet contains not enough of calcium. The address was illustrated by projections on the screen of bones and teeth of human beings and animals. Before the lecture Dr. C. W. Rowland gave a dinner in honor of Dr. Hemmeter.

At the annual meeting of the board of trustees, the board of managers and the staff of

the Union Protestant Infirmary, on January 26, plans for obtaining \$325,000 for a new building were launched. A site has already been purchased.

THE Mental Hygiene Society of Maryland met in Baltimore on January 24. Addresses were made by Dr. Adolf Meyer, Baltimore, director of Phipps Psychiatric Clinic; Mr. Leona Faulkner, superintendent of the Maryland School for Boys, and Mr. G. H. Reeves, assistant superintendent of schools.

DR. AND MRS. WALTER A. COX of Forest Park left recently for a month's trip through the South. They will visit Palm Beach, Miami, St. Augustine, Key West, Havana and the Bahamas before they return.

DR. WILLIAM C. STONE recently entertained the members of the Howard County Medical Society at his home. Dr. William J. Messick read a paper on the diagnosis and treatment of gastric ulcer. Those present were Drs. William C. Stone, W. W. L. Cissel, Samuel A. Nichols, William R. Earackson, Frank O. Miller, William B. Grambrill, William I. Messick and William B. Travers.

At the meeting of the Baltimore City Medical Society on February 16, Dr. John B. Deaver delivered an address on the "Differentiation of Abdominal Pain." The discussion was opened by Drs. J. M. T. Finney, Randolph Winslow and A. C. Harrison.

At the regular monthly meeting of the Baltimore County Medical Association, at the Medical and Chirurgical Faculty Building, on Wednesday, February 21, Dr. Samuel J. Fort delivered a lecture on "Preparing for Preparedness." Lectures were also given by Drs. Charles G. Hill, Frank W. Keating and Arthur P. Herring.

DR. C. E. CLARK is at present filling the position of resident physician at the Hahneman General Hospital. Dr. L. R. Porter, who has been at the hospital since September, has resigned and gone to Fairfield, Pa., where he will take up private practice. Dr. C. E. Clark's appointment is not permanent, and the board will appoint a successor in a few weeks.

DRS. HERBERT SCHOENRICH and G. Milton Linthicum, who have been serving with the Fifth Infantry, have resigned.

MISS JEANNE WILMER SMART, daughter of Dr. and Mrs. L. Gibbons Smart, Creighton Sanatorium, Lutherville, was married to Dr. F. Janney Smith, son of Dr. and Mrs. B. Holly

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Smith, on Wednesday, February 14. Dr. Smith is a resident physician at the Henry Ford Hospital, Detroit, Mich.

At the annual meeting of the Baltimore County Medical Society, held January 27, officers were elected as follows: President, Dr. Martin F. Sloan, Towson; vice-president, Dr. J. Percy Wade, Catonsville, and secretary-treasurer, Dr. Frank W. Keating, Owings Mills.

SENIOR SURGEON HENRY R. CARTER, U. S. P. H. S., Baltimore, superintendent of the Marine Hospital, is at Columbia, S. C., where he will superintend sanitary work on the new filtration plant in that city. In his absence Dr. Charles Vogel, Baltimore, will have charge of the hospital.

DR. WILLIAM E. MARTIN, Harrisonville, narrowly escaped being killed when an automobile in which he was riding skidded on the ice and rolled over an embankment. He escaped with body bruises.

DR. STACY T. NOLAND, Cambridge, assistant physician of the Eastern Shore State Hospital, has resigned to accept a similar position at the Montana State Hospital for Insane.

THE Eudowood Hospital at Towson and the General and Marine Hospital at Crisfield have been offered to the Government in case of war.

THE Baby Welfare Association has issued a report showing the relative standing of the ten largest cities in the country with regard to infant mortality rate. The ten cities and the order in which they stand are: St. Louis, New York, Philadelphia, Boston, Cleveland, Pittsburgh, Chicago, Detroit, Buffalo and Baltimore, the rate ranging per 1000 from 89 in St. Louis to 118 in Baltimore. While Baltimore stands tenth in actual infant mortality rate, the city has made the largest reduction in the infantile death rate of any of the ten cities.

DEATHS.

DR. BENJAMIN RUSH RIDGELY, one of the pioneers of Baltimore county, died at his home February 2 from the infirmities of old age. He received his early education in the schools of the county, and later went to the University of Maryland, where he graduated in 1847.

FREDERICK W. FOCHTMAN, M.D., Cumberland, Md., College of Physicians and Surgeons, Baltimore, 1889; aged 49; a Fellow in the American Medical Association, a pioneer Roentgen-ray operator of Western Maryland,

was found dead in his automobile at Ellerslie, January 5, from cerebral hemorrhage.

JOHN L. HOSHALL, M.D., Oklahoma City; College of Physicians and Surgeons, Baltimore, 1899; aged 43; a member of the Oklahoma State Medical Association, was accidentally killed January 4 by a collision between the automobile in which he was riding and another car.

HARRY BLAIR WARRINER, M.D., Philadelphia; Maryland Medical College, Baltimore, 1912; Hahneman Medical College, 1914; aged 28; chief resident physician at the Children's Homeopathic Hospital, died at that institution January 4 from pneumonia.

SAMUEL J. COVERT, M.D., Perrysville, Ohio; College of Physicians and Surgeons, Baltimore, 1882; aged 65; formerly a member of the Ohio State Medical Association, died at his home November 8 from cerebral hemorrhage.

IRVING DRURY CHANEY, M.D., Mount Airy, Md.; University of Maryland, Baltimore, 1906; aged 35; formerly a Fellow of the American Medical Association; a member of the Medical and Chirurgical Faculty of Maryland, died at Portland Manor, Md., January 18.

CLARENCE K. KUYKENDAL, M.D., Rock Hill, S. C.; University of Maryland, 1890; aged 48; who retired from practice several years ago to take charge of the Kuykendal Drug Co., died in Rock Hill January 5.

GEORGE A. ANDERTON, M.D., Greystone Park, N. J.; Baltimore Medical College, 1907; aged 35; assistant physician at the Morris Plains (N. J.) State Hospital, died January 1.

JOSEPH J. ANDZULATIS, M.D., New Britain, Conn.; College of Physicians and Surgeons, Baltimore, 1894; aged 51, died at his home December 29.

JAMES HOWELL BILLINGSLEA, M.D., Westminster, Md.; University of Maryland, Baltimore, 1864; aged 73; a member of the Medical and Chirurgical Faculty of Maryland; for fifty-two years a practitioner of Westminster; president of the Union National Bank, Consolidated Public Utilities Co. and Democrat Advocate Publishing Co., died at his home January 29 from cerebral hemorrhage.

JAMES K. WATERS, M.D., Thurmont, Md.; University of Maryland, Baltimore, 1869; aged 78; Registrar of Wills of Frederick county for six years; president of a bank and a druggist, died recently.

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RELATIONSHIP OF STATE MEDICAL LICENSING BOARDS.*†‡

By Herbert Harlan, M.D.

You have heard how the present National Board of Medical Examiners is organized. It is a voluntary board. It, of itself, has no law, National or State, behind it. No one, in order to practice medicine in the United States, is compelled to take its examination. You know who are on this board at present, and how future members are to be selected, and you will be informed what sort of men will be admitted to its examinations, and how those examinations are to be conducted. Everyone here knows that if we had in this country only the right sort of schools, it would only be necessary to require a diploma of those schools and to see that the immigrant physicians were properly equipped, and the safety of the people would be provided for, and there would then be no occasion for National or State Boards of Medical Examiners. It is known that medical schools are not what they might be, and to hope that all education, including professional education, can be satisfactorily regulated by law is to hope for the impossible.

Protection of the people is a State police function, and without an amendment to the constitution of the United States cannot be taken over by the National Government. Such an amendment is not to be hoped for. State Examining Boards must continue, but as a large number (41) of State Boards have the legal authority to recognize as sufficient guarantee of fitness, examinations conducted by boards of other States—examinations in regard to the conduct of which, in many instances, little is known and nothing inquired into—there is no legal objection to a change of statute granting a State Board the authority to recognize the certificate or diploma of the National Board as sufficient evidence of

*Read at the Conference of the Council on Medical Education in Chicago, Ill., March 7, 1916.

†Abstracted in the Journal of the A. M. A.

‡Since the paper was written the Executive Committee of the National Board of Medical Examiners has changed the requirements for preliminary medical education from one to two years of college work.

medical qualification—but only if, in the good judgment of the State Board, the examinations, written, oral and practical conducted by the National Board are of such a character as to justify its acceptance.

This brings us to my subject, "Relations of the State Boards to the National Board."

Early in December I wrote to the secretaries of 63 boards of 53 States and Territories, enclosing this questionnaire:

1. Under your present law, has your board the power to accept the examination of a National Board in lieu of your own examination?

Ans.

2. (a) If so, would your board be willing to license physicians who had passed that examination without requiring them to take your own?

(b) If not, would you be willing to ask your Legislature to so amend your law as to give your board that power?

Ans.

3. Does the present organization of the National Board of Medical Examiners and the arrangement for its continuance, viz.: six from the Government services, three from the Federation of State Medical Boards of the United States and six others selected by the National Board of Medical Examiners itself, seem to you satisfactory?

Ans.

4. Do the proposed requirements for admission to the examination of the National Board of Medical Examiners meet your approval?

Ans.

These are the questions that were sent to all of the boards except the nine requiring two years of college work preliminary to the study of medicine. To these nine (Alabama, Colorado, Indiana, Iowa, Minnesota, New Hampshire, New Jersey, North and South Dakota) question 4 was changed to read as follows:

(a) Would the present preliminary education requirements of only one year college work in lieu of the two years of college work required by your board, entirely prohibit the acceptance of the diploma of the National Board of Medical Examiners by your board?

(b) If so, would your board probably be willing to ask your Legislature to amend your law so as to allow you to accept this diploma, if your board should be satisfied of the very high character of the examination conducted by the National Board of Medical Examiners?

I have answers from 37 States and 50 boards. Not as many as I hoped for, but perhaps enough to enable us to learn some facts and draw fair conclusions.

To the first question 39 boards answered "No," 7 "Yes" and 1 (Maine) was doubtful, but thought a way might be found to recognize the examination. Two were non-committal.

To question 2 (a) I received 17 answers, 8 negative, 9 affirmative. The other writers evidently thinking as they had no legal authority, it was useless to signify a willingness or unwillingness.

But to section (b) of question 2 the answers were better, 6 being "No" and 23 "Yes," signifying a willingness to ask for a change of law to enable them to accept the examination of the National Board.

The answers to question 3 show that the present organization of the board and the plan of its continuance is satisfactory to 23, to 6 unsatisfactory, and 13 would like some modifications. For example:

- (a) Thinks "each State Board should have a representative."
- (b) Thinks the "other six" should be taken from the State Boards.
- (R) "No excuse for giving Government services predominating direction."
- (b) "Yes, provided there is representation of homeopaths (H) and eclectics on the board."
- (c) "No; too much army and navy; should be controlled (Council) by A. M. A."
- (d) (H) Want a representative from one of the Homeopathic Boards.
- (e) (H)
- (f) "No. It is self-constituted, appointed board, without any legal existence or without any satisfactory method of appointment or selection, and as at present constituted and arranged cannot receive recognition in Iowa."
- (g) Wants three schools of medicine represented, and the osteopathic school considered separately.

To question 4, regarding the proposed requirements for admission to the examination of the National Board, 20 answered "yes" and 1 "no."

Of the nine (9) States requiring two years of preliminary college work, five answered the special question 4 which was addressed to them, and of the five, Iowa and New Jersey answered "yes" to (a) and "no" to (b), and Minnesota "yes" to (a) and (b).

Colorado and New Hampshire "no" to (a) and to (b) "No change in law necessary."

To express it differently, Iowa and New Jersey say that on account of their two years' college entrance requirements, they would not be willing to accept the entrance requirements of the National Board, which is at present only one year, and yet both

of these States now have reciprocal relations with other States which do not require the two-year preliminary college work.

Colorado and New Hampshire also require two years of preliminary college work, but are willing to accept the examination of the National Board, and no change in their laws is required to enable them to do this. Minnesota is doubtful.

This makes two on each side and one doubtful.

To summarize, only a few boards have legal authority at this time to accept the National Board, probably 8. Of those having no authority, however, 71 per cent. have expressed themselves as willing to ask for legislation enabling them to do so.

It is expected that each State Board will exact the same fee for recognition of the examination of the National Board that they do now for the recognition of the license by another State.

Of course, the success of this movement to establish a National Board of Medical Examiners will depend on the acceptance of its diploma or certificate of proficiency by all, or nearly all, of the various State Boards.

It is hoped and expected they will ultimately do so. Time alone can determine.

REPORT OF 100 CONSECUTIVE CATARACT OPERATIONS.

By E. A. Knorr, M.D.,

Surgeon Presbyterian Eye, Ear and Throat Charity Hospital, Baltimore, Md.

THE value of a report of a number of cataract operations depends upon the consecutiveness of the cases and the accuracy with which they are reported.

In such a group of cases, interest centers chiefly about the unsuccessful operations, especially the cases of purulent infection and iridocyclitis. Purulent infection always leads to the total loss of vision in the operated upon eye; the iridocyclitis cases are of two types, the severe and the mild; the severe cases also cause the total loss of vision, but the mild form, after the inflammation has subsided, is followed by fairly good vision.

The etiology of infection comprises both the exciting and the predisposing causes. The exciting causes is bacterial infection, and in the purulent cases, of which there were two, the staphylococcus aureus was grown out from cultures taken from the anterior chamber.

No cultures were taken from the anterior chamber in the iridocyclitis cases, as it was not deemed to be in the best interest of the patient to impose an additional traumatism and the danger of reinfection upon an already infected eye.

The predisposing causes are both local and general.

Among the local causes are chronic conjunctivitis, cicatrices of lids, ptosis and trachoma; there are a number of conditions that

may occur at the time of operation which predispose to infection, such as the entrance of air and blood in the anterior chamber, sunken or collapsed cornea and excessive traumatism; after operation the most potent cause of infection is prolapse of the iris and any form of traumatism that reopens the anterior chamber.

The general causes of infection include all conditions that lower the vitality and resisting power of the patient; such conditions are frequent in the cataract patient; loss of vision and the inactivity and depression of spirit that it incurs is a factor in diminishing the resistant power of the patient.

The unsuccessful cases comprised a group of eight, which were composed of two purulent infections, two severe and four mild cases of iridocyclitis. A brief review of these cases is as follows:

Case 11—Purulent infection; colored man, 70 years old; ptosis and chronic conjunctivitis. He had been using argyrol in conjunctival sac for two months. Type of operation combined extraction, slight loss of vitreous; pus appeared in the anterior chamber four days after operation.

Case 34—Purulent infection; white man, 54 years old. This patient had lost a good deal of weight and was a little weak, suffering from what he called stomach trouble; the lower canaliculus had been severed, which left a little triangular area in exposed conjunctiva which was always occupied by a bit of mucus; argyrol had been used for a week before operation; the operation was a combined extraction, the patient was an excellent one, the operation ran along smoothly, the conjunctival sac was kept dry so as not to allow any fluids of the conjunctival sac to re-enter the anterior chamber; at the first dressing, two days after operation, there was a muco-purulent discharge from the conjunctiva. The aqueous cloudy and the iris blurred, the usual symptoms of purulent infection followed; result, total loss of vision.

Case 3—Severe iridocyclitis; white woman, 74 years old; combined extraction, operation ran along smoothly, some soft lens substance was left in the anterior chamber; three days after operation there was slight clouding of the anterior chamber and slight pain; result, light perception.

Case 13—Severe iridocyclitis; white woman, 65 years old; simple extraction; this patient had an old cicatricial trachoma, the blades of the speculum could not be opened quite wide enough to allow free movement of the knife, the corneal section had to be enlarged with the scissors; prolapse of the iris was noted two days later; vision lost.

Case 22—White man, age 68 years; simple extraction. A small air bubble and some soft lens substance remained in the anterior chamber; six days after operation eye was clear and bright; on the seventh day there was blood in the anterior chamber and the corneal wound had the appearance of having been recently opened; four days later the blood had been absorbed and the eye was clear and bright and he could count fingers easily. He left the hospital the eleventh day after operation. In 10 days he returned

Case.	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
White	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Colored	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Male	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Female	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Combined Extraction	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Simple Extraction	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Smith's Extraction	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Preliminary Capsulotomy	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Conjunctival Flap	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Irrigation Anterior Chamber	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Loss of vitreous	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Prolapse of Iris	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Displacement of pupil upward	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Striate Keratitis	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Detached Retina	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Iridocyclitis	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Purulent infection	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Diabetic Cataract	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Traumatic Cataract	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Capsulotomy	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Successful Operations	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Partially successful	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Failures	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Vision	40	20	20	0	200	1	20	20	3	200	200	30	20	80	200	15	60	200	40	200	200	120	200	120	120
Fundal Lesions	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Age	76	78	55	41	44	67	67	51	63	60	65	47	73	62	72	59	60	64	80	70	57	57	57	57	57
Hypermaturation Cataract	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Right Eye	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Left Eye	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Blood in Anterior Chamber	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cyst of Anterior Chamber	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Air in Anterior Chamber	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sunken Cornea	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Delayed Restoration of Ant. Chamber	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Prosis	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gleetsial Trachoma	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Chronic Conjunctivitis	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Laceration of Lower Canaliculus	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Iridotomy	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Corneal Opacity	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Protrusion of Vitreous	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Buttonhole Iridectomy	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atropine Eruption	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Secondary Glaucoma	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
cholestrin Crystals in Vitreous	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Case.	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
White.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Colored.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Male.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Female.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Combined Extraction.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Simple Extraction.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Smith's Extraction.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Preliminary Capsulotomy.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Conjunctival Flap.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Irrigation Anterior Chamber.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Loss of vitreous.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Protrapse of Iris.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Displacement of pupil upward.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Striate Keratitis.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Detached Retina.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Iridocyclitis.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Purulent Infection.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Diabetic Cataract.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Traumatic Cataract.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Capsulotomy.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Successful Operations.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Partially Successful.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Failures.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Vision.....	40	60	80	20	200	80	60	40	80	60	200	40	60	30	120	5	200	200	60	80	60	80	40	60	40
Fundal Lesions.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Age.....	48	55	60	70	60	60	73	75	81	49	70	68	82	71	57	73	70	65	60	60	62	72	62	74	63
Hypertensive Cataract.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Right Eye.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Left Eye.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Blood in Anterior Chamber.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cyst of Anterior Chamber.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Air in Anterior Chamber.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sunken Cornea.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Delayed Restoration of Ant. Chamber.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ptosis.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cicatricial Trachoma.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Chronic Conjunctivitis.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Laceration of lower Canaliculus.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Iridotomy.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Corneal Opacity.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Protrusion of Vitreous.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Buttonhole Iridectomy.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atropine Eruption.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Secondary Glaucoma.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cholesterol Crystals in Vitreous.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

with blood again in the anterior chamber, which required five days for absorption; the capsule was a little thick and required a capsulotomy; he obtained a vision of 20/200. The hemorrhages and the accompanying inflammation was no doubt due to traumatism.

Case 60—White man, 65 years old; button-hole iridectomy; operation uneventful, the anterior was irrigated with salt solution; three days later there was prolapse of the iris with the usual inflammation that it causes; fibrinous exudate formed in the anterior chamber; after subsidence of the inflammation patient obtained a vision of 20/80.

Case 64—Mild form of iridocyclitis; colored woman 56 years old; uneventful operation; anterior chamber irrigated, patient developed a cough and was at all times covered with a slight perspiration; capsulotomy was performed six weeks after subsidence of inflammation; vision 20/60.

Case 91—White woman, age 73 years; combined extraction. The lens did not tilt easily during expression, the upper edge was obstructed, some vitreous escaped and the lens had to be removed with a loop; the eye was clear four days and then became cloudy, a clear bead of vitreous protruded through the corneal wound; this bead of vitreous gradually became smaller and by the twentieth day had disappeared; the capsule was a little thick, vision with correction 20/120. Capsulotomy six months later, vision improved to 20/40. Urine contained sugar.

Summary: In the above eight cases in addition to the bacterial infection the associated conditions were:

Case 11—Ptosis, chronic conjunctivitis and loss of vitreous.

Case 34—Laceration of the lower canaliculus and poor health.

Case 3—No perceptible cause.

Case 13—Cicatricial trachoma and prolapse of the iris.

Case 22—Blood in the anterior chamber of traumatic origin.

Case 60—Prolapse of the iris.

Case 64—Cough and profuse perspiration.

Case 91—Loss of vitreous, additional instrumentation, glycosuria.

Among other points of interest may be mentioned the type of operation and the results obtained.

	Successful.	Partially successful.	Failures.
80 Combined extractions.....	74	2	4
2 Button-hole iridectomies.....	1	1	0
13 Simple extractions.....	10	2	1
5 Smith operations.....	5	0	0
Total	90	5	5

Preliminary capsulotomy was performed seven times with good results in each case; the capsulotomy was performed 24 hours before extraction; the lens is easily and completely expelled.

obviating the necessity of irrigating the anterior chamber; two of the seven cases were simple extractions.

Irrigation of the anterior chamber was done 42 times, normal salt solution being used; indications for its use are retained soft lens substance, blood and air in the anterior chamber and sunken cornea.

Loss of vitreous occurred eight times; the five Smith operations furnished four, thus 80 per cent., and the 95 other operations furnished four, thus 4 per cent. Moderate loss of vitreous does no harm, of the eight cases, but one was lost and the infection in that case was due to a chronic conjunctivitis and ptosis. Owing to the prolapse of the iris that accompanies loss of vitreous the danger is greater in the simple extraction.

Prolapse of the iris occurred four times; two of the cases were simple extractions, one a button-hole iridectomy and the other a Smith operation; prolapse of the iris necessarily delays the restoration of the anterior chamber and greatly increases the danger of infection, although but one of the cases lost vision entirely; the remaining three obtained a vision of 20/40, 20/60 and 20/80. It is interesting to note that of the 80 combined extractions there was not a case of prolapse of the iris; in a number of them the iris became adherent to the corneal wound, causing a slight distortion of the pupil, which was of such a mild grade that no note was made of them.

Displacement of the pupil upward was very pronounced in seven cases; the five Smith operations furnished four of them; the chief fault that I have noted in the Smith operation is the excessive displacement of the pupil upward, which accompanies every case in which there is a loss of vitreous.

Air in the anterior chamber was noted eight times, at the time of operation, associated with sunken cornea three times. The presence of air in the anterior chamber adds the possibility of air-borne infection; infection occurred in one of the cases that was associated with sunken cornea; air should never be allowed to remain in the anterior chamber, but should be expelled by irrigation with salt solution.

Sunken or collapsed cornea was noted in 16 cases; it usually occurs in very old and feeble patients, the tension of the eye is minus, the circulation weak and the secretion of aqueous very slow. Sunken cornea is often followed by striate keratitis, but very rarely attended by loss of vitreous.

Transplantation cyst of the anterior chamber; so far but two have been noted; each began in the upper part of the anterior chamber, one was removed when small and there has been no recurrence, it was attached to the iris; the other was larger and the patient would not have it removed; the latter case I have not seen for some time, and I suppose that it has destroyed the sight of the eye.

Vision recorded as follows:

2—20/15; 15—20/20; 7—20/30; 12—20/40; 13—20/60;
10—20/80; 12—20/120; 11—20/200 or less; 9—Unrecorded.

The acuity of vision in the above table is rather low, which is due to the fact it was determined 10 days after operation. As time elapses the astigmatism diminishes, the eye becomes more tolerant to light and there is a corresponding improvement in vision as illustrated in the following cases:

	Case 1.	Case 42.
10 Days after operation	20/120	20/80
20 " " "	20/70	20/60
40 " " "	20/20	20/15

This improvement in vision occurs only in healthy eyes. After operation occasionally one finds a senile chorio-retinitic degeneration at the macula which markedly reduces vision. This lesion can be present and the patient still possess good light projection; even grosser fundal lesions can be present and the patient still possess good light projection.

Fundal lesions accounted for low visual acuity in six cases. Age of patients as follows: Third decade 1, fourth decade 6, fifth decade 17, sixth decade 35, seventh decade 37 and eighth decade 4.

The majority of the cases come to operation during the seventh decade. The case occurring in the third decade was of traumatic origin.

Those occurring during the fourth decade must be attributed to some other cause than age, such as diabetes, traumatism, heredity, etc.

THE ALLEN TREATMENT OF DIABETES.†*

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and

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THE method of treatment of diabetes first devised by Allen presents a great advance in the therapy of this disease. This plan of treatment is based entirely upon the knowledge acquired by laboratory investigation, and thus presents further evidence of the value of scientific experimentation in the development of clinical medicine and therapeutics.

Allen has shown that by a partial removal of the pancreas with a preservation of the pancreatic duct so as to avoid atrophy of

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the remaining portion of the pancreas, a condition can be produced which most satisfactorily resembles that observed in ordinary diabetes as seen in the human being. According to the degree of destruction of the pancreas, the intensity of the disease can be made to vary from the mildest to the most severe type.

It would take us too far to discuss in detail the various theories relating to the causation of diabetes, but a few remarks might not be out of place in order to make clear the basis for this special plan of treatment.

It is generally admitted by most observers that there is present in diabetes an inability to utilize carbohydrates, and that the pancreas in some manner controls the utilization of the sugar by the tissues. Diabetes is therefore brought about as a result of a weakness of the internal secretion of the pancreas. According to Allen, there may be a marked destruction of the pancreatic tissue, but in the largest proportion of cases, however, there is only a disturbed function "which can be broken down by overstrain or strengthened by rest." Allen says, "for practical purposes we may well keep to the simple idea mentioned above, that diabetes is merely the weakness of a bodily function—namely, the function of assimilating certain foods. It may be compared with indigestion. A weak stomach may never become a strong stomach, but there is no cause for death unless the patient abuses the weak organs. The possibility and perhaps the probability exists that a weak pancreas is something analogous. Every person has his weak points, and ultimately breaks down at some one point, rather than everywhere simultaneously. If a person overtaxes a weak stomach, the resulting distress punishes the error and forces him to desist. If he overtaxes a weak pancreas, nothing but intelligence can show him what is wrong. If there were no prompt reflex mechanism to prevent and punish overtaking the digestive function, doubtless the death rate from indigestion would be fully as high as the death rate from diabetes now is."

The treatment of diabetes as devised by Allen was first carried out on dogs. It was observed that by destroying a portion of the pancreas, and then producing glycosuria, that this condition could be overcome by fasting and that the animal could then be placed on a diet which would maintain life without producing glycosuria again. He applied this principle in the treatment of patients affected with diabetes. According to this plan, the patient is kept in bed and fasted until the glycosuria disappears, and perhaps for twenty-four to forty-eight hours longer. Water, however, can be taken freely. With the fast the acidosis diminishes and often disappears.*

Inasmuch as alcohol does not produce glycosuria and has a tendency to decrease acidosis, it may be prescribed during the fast, especially if an acidosis is present. It is especially useful as

*Joslin has recently simplified the fast days by allowing clear meat broth as desired in addition to water, tea and coffee, which renders the fast much less strenuous.

a food, as it does not produce glycosuria. There is no contraindication to the use of the alkalies if coma seems threatening, though even in this condition they are rarely needed. When the patient has been sugar free from twenty-four to forty-eight hours he is placed on a diet of vegetables containing 5 per cent. of carbohydrates. If sugar should again appear, another fast day should be prescribed. The original fast may last from three to eight days, but usually not over four days; after this the fast need not be longer than one day. Starvation is well tolerated, and the patient loses flesh, and according to Allen a moderate loss of weight is of advantage to the patient. There are no contraindications to the fast, except perhaps nausea, vomiting, and great prostration. If these symptoms supervene they can be overcome by feeding, and then after a short period another fast can usually be undertaken without their reappearance. Such complications as carbuncles, beginning gangrene, and infections are special indications for the employment of this plan of treatment, and are directly overcome by the fasting.

After the urine is sugar free for one or two days the carbohydrate tolerance of the patient is estimated. Vegetables containing 5 per cent. of carbohydrates are first allowed. In prescribing the dietary the table of Joslin is of the greatest help. At first but 150 gm. of these vegetables should be taken per day. In very severe cases, whenever the green vegetables cannot be tolerated by patients without producing glycosuria, they should be boiled three times with change of water, thus reducing their carbohydrate content nearly a half. The quantity of the 5 per cent. vegetables can be gradually increased to an amount to make 25 gm. of carbohydrate, and then gradually up through the 10 per cent., 15 per cent. forms and the 5 per cent. and 10 per cent. fruits and up to the 20 per cent. carbohydrate foods. The carbohydrate tolerance of the patient is estimated daily, and at the first appearance of the slightest trace of glycosuria the patient is again fasted, and the vegetables of the 5 per cent. variety again given, and increased cautiously, but kept below the limit of tolerance. On the day following that on which the vegetables are first allowed (the urine remaining sugar free) the proteids are gradually added, beginning with 20 gm. a day in the form of eggs and meat, and are increased daily until the patient is receiving, according to Joslin, 1.5 gm. of protein per kilogram of body weight. Fats have already been taken in small quantity with the proteids in the eggs and meats, and should be gradually increased. These are best given in the form of butter, cream and olive oil, but not more than 200 gm. per day should be taken. It is quite as important to estimate the fat tolerance as that of the carbohydrates and proteids, for while there is no evidence whatsoever that sugar is produced by fats, there is no doubt but that glycosuria is very apt to supervene in severe cases of diabetes on the addition of quantities of fats, such as butter and olive oil. It is probable, according to Allen, that the glycosuria is produced in these cases by the stimu-

JOSLIN'S DIET TABLE IN THE TREATMENT OF DIABETES.*

strict Diet. Meats, Fish, Broths, Gelatine, Eggs, Butter, Olive Oil, Coffee, Tea and Cracked Cocoa.

Foods Arranged Approximately According to Per Cent. of Carbohydrates.

VEGETABLES. 5 per cent.		10 per cent.	15 per cent.	20 per cent.
Lettuce	Cauliflower	Onions	Green Peas	Potatoes
Spinach	Tomatoes	Squash	Artichokes	Shell Beans
Sauerkraut	Rhubarb	Turnip	Parsnips	Baked Beans
String Beans	Egg Plant	Carrots	Canned Lima Beans	Green Corn
Celery	Leeks	Okra		Boiled Rice
Asparagus	Beet Greens	Mushrooms		Boiled Macaroni
Cucumbers	Water Cress	Beets		
Brussels	Cabbage			
Sprouts	Radishes			
Sorrel	Pumpkin			
Endive	Kohl-rabi			
Dandelions	Broccoli			
Swiss Chard	Vegetable Marrow			
Sea Kale				
FRUITS.				
Ripe Olives (20 per cent. fat)		Lemons	Apples	Plums
Grapefruit		Oranges	Pears	Bananas
		Cranberries	Apricots	
		Strawberries	Blueberries	
		Blackberries	Cherries	
		Gooseberries	Currants	
		Peaches	Raspberries	
		Pineapple	Huckleberries	
		Watermelon		
NUTS.				
Butternuts		Brazil Nuts	Almonds	Peanuts
Pignolias		Black Walnuts	Walnuts (English)	
		Hickory	Beech Nuts	
		Pecans	Pistachios	
		Filberts	Pinenuts	
				40 per cent. Chestnuts

MISCELLANEOUS.

Unsweetened and unsalted pickles, clams, oysters, scallops, liver, fish roe.

Reckon *actually available* carbohydrates in vegetables of 5 per cent. group as 3 per cent.; of 10 per cent. group as 6 per cent.

(30 grams 1 oz.) Contain approximately.	Protein grams.	Fat grams.	Carbohydrates grams.	Calories.
Oatmeal, dry weight.....	5	2	20	110
Meat (uncooked).....	6	2	0	40
Meat (cooked).....	8	3	0	60
Broth	0.7	0	0	3
Potato	1	0	6	25
Bacon (cooked).....	5	15	0	155
Cream, 40 per cent.....	1	12	1	120
Cream, 20 per cent.....	1	6	1	60
Milk	1	1	2	20
Bread	3	0	18	90
Butter	0	25	0	240
Egg (one).....	6	5	0	75
Brazil Nuts.....	5	20	2	210
Orange (one).....	0	0	10	40
Grapefruit (one).....	0	0	10	40
Vegetables, 5-10 per cent. groups.....	0.5 or 1.5	0	1 or 2	6 or 10

1 gram protein, 4 calories.

1 gram fat, 9 calories.

6.25 grams protein contain 1 gram nitrogen.

30 grams (g) or cubic centimeters (c.c.)=1 ounce.

1 gram carbohydrates, 4 calories.

1 gram alcohol, 7 calories.

1 kilogram=2.2 pounds.

A patient "at rest" requires 25 to 30 calories per kilogram body weight.

*Present-day Treatment of Diabetes (*American Journal of Medical Sciences*, October, 1915).

lating effect of the fat upon metabolism. Among the facts brought out by the Allen treatment is one of great importance, that is, that in order to prevent a return of glycosuria the diet should be increased gradually from the starvation days, and that the increase in proteids and fats should be regulated just as carefully as the carbohydrates and kept within the limits of tolerance. Rosenblum has also recently shown the importance of restricting the quantity of proteids in order to lessen the excretion of acetone bodies, and a similar conclusion has been held for some time with regard to the fats.

In the event of the reappearance of glycosuria after the increase of the diet, starvation should again be resumed for a day or two until the sugar disappears, and the diet should then be increased cautiously. It is also well to prescribe, especially in the severe forms of diabetes, starvation days once a week or once in ten days, while in the milder forms vegetable days will usually suffice. Even though a patient is sugar free it is best not to increase his diet too much; that is, if he is taking 60 grm. of proteids, 40 grm. of carbohydrates and 200 grm. of fat a day, he is consuming quite sufficient food, and these quantities should not be increased.

The following table indicates that such a patient's intake represents about 2200 calories:

Food.	Quantity in grams.	Calories per gram.	Total Calories.
Proteid	60	4	240
Carbohydrates	40	4	160
Fats	200	9	1800
			Total, 2200

The caloric intake is low in many of the diabetic diets, but notwithstanding this the patients usually do well, although they may lose some in weight. According to Allen, an initial loss of flesh need not cause alarm, and, in fact, is of benefit to the patient. After the patient is sugar free there is no objection, however, to a gain in flesh, but this should not exceed the original weight. In severe cases with great loss of flesh in which the carbohydrate and proteid tolerance is low, the balance can be made up by the fats to a certain degree, often as much as 150 grm., and the remainder with alcohol, which is a food which does not produce glycosuria.

In those severe cases with ketonuria it is well to give the patient soda for the first day or two of the fast period; but it is surprising how quickly this remedy can be lessened and withdrawn without danger and with a disappearance of the acidosis. According to Joslin, it may be advisable to prescribe in a certain number of severe long-standing cases with acidosis a diet of carbohydrates for a few days preceding the initial fast, which will shorten the fasting period and also prevent an acidosis during this time. We have been in the habit for years of advising champagne in this condition, and are confident that it has acted as a specific and a

life-saving measure in a number of cases with threatened coma. Whiskey is also of great value in these cases.

The following table indicates the quantity of food that may be taken by a severe case of diabetes :

Food.	Quantity per gram.	Calories in gram.	Total Calories.
Proteids	70	4	280
Carbohydrates	15	4	60
Fats	150	9	1350
Alcohol	25	7	175
			Total, 1865

In other instances in which acidosis first appears after the fast has been instituted, and when the sugar has disappeared from the urine, there need be little fear of threatened coma, for the ketonuria will usually disappear on the addition of the vegetable foods. Alcohol given in frequent but moderate amounts will also tend to overcome this condition.

Allen has also observed that exercise increases the tolerance of patients with diabetes, both for carbohydrates and proteins. In the stronger patients the initial fast may be shortened by this method, and in other individuals exercise may be begun as soon as the glycosuria and acidosis have subsided. According to Allen, if glycosuria appears after the carbohydrates, proteins and fats have been added to the diet, it is often possible to overcome this condition by exercise while continuing on the same diet. It is especially important to prescribe exercise immediately after meals containing carbohydrates, which have a tendency to induce glycosuria, but exercise can be taken at any time. It is best to encourage short courses of severe exercise with periods of rest, rather than long continuous exercise, such as long walks, which may cause fatigue. Allen advises such exercises as running up and down stairs, jumping rope, turning somersaults, and tennis. While fat is being reduced by exercise the muscular tissue is built up, and the "flabby-muscled diabetic is turned into an athlete as far as practicable."

Inasmuch as the diet must be carefully watched even when the patient is no longer under the immediate care of the physician, it will be well to interest the patient in his condition, especially in regard to his food. He is therefore taught to examine his urine for sugar and to make this test two or three times weekly, and is urged to keep a record of the quantity and character of his food. At the slightest appearance of sugar he should report his condition to the physician, and his food must be reduced or a starvation day must again be taken according to the plan already described. An intelligent patient will usually take the keenest interest in his condition, will examine his urine frequently, will watch the quantity and character of the food and assist materially in keeping himself free of sugar and of an acidosis. To those whose experience with this form of treatment is limited, we should like to call attention to the little work of Hill and Eckman, which gives a clear, succinct account of the Allen treatment, with gradu-

ated diet lists that can be easily followed. The tables of Locke can also be utilized to great advantage in calculating food values. Hart's Food Scale is also to be recommended as a most useful and simple apparatus for weighing food, and one which the patient can easily handle himself.

We have thus far treated 20 cases according to the Allen plan. Of these, 3 were severe cases, 10 moderately severe cases, and 7 mild cases. All were rendered sugar free in from one to four days, and all have been kept free of sugar with the exception of one case, in which the patient has not followed the dietary restrictions. In a very few instances in which sugar reappeared, this condition was easily overcome by a single day's fast. All the patients are in good condition and are carefully following their dietary regulations.

We do not believe that we can sum up the importance of this plan of treatment better than by quoting from remarks recently made by Joslin: "Fasting and a low diet have been known, but it is only fair to give Allen the credit of (1) seeing the therapeutic significance of inanition upon a severe case of diabetes, (2) proving upon diabetic dogs that prolonged fasting would render them sugar free, and (3) having the courage of his convictions and applying this principle to human diabetes. Thanks to Dr. Frederick M. Allen we no longer nurse diabetics; we treat them."

Book Reviews.

SOCIAL TRAVESTIES AND WHAT THEY COST. By D. T. Atkinson, M.D. New York: Vail-Ballou Company. Cloth, \$1 net. 1916.

Dr. Atkinson in this work lucidly presents the chief factors underlying social vice. It is time that the people of the country, both men and women, stop and take stock of the conditions leading to the degradation of so many of our women. And after all, as Dr. Atkinson so succinctly states, it narrows itself down to the unwillingness of the money aristocracy to sacrifice a portion of their profits to the men and women who make their wealth possible. It is the old, old story of the dog in the manger. They want to hog all the profits, and expect the poor clerk on starvation wages to maintain a respectable appearance, which can only be done by leading an easy life. The writer attributes woman's downfall mostly to economic depression, which leads to improper housing and living conditions. His argument is strong and convincing. From prehistoric times people have looked askance at reform. Today it is no exception. But little by little, through the efforts of great spirits—dreamers, if you will—the public attitude toward social injustice is gradually undergoing a change. Laws have been enacted creating better hours and brighter and cleaner workshops. The child, the hope of the nation, has been surrounded with protective measures, and a small, but enthusiastic

group of earnest men and women have been and are attacking the social evil. It maintains what is sauce for the goose is sauce for the gander; that right living is only to be brought about by inculcating the young idea how to shoot; that at the period of adolescence both male and female should be taught the mysteries of nature. Until this is the universal practice the female will continue to go astray. But when she is taught the dangers lurking in the double standard, she will demand of the male a clean bill of health before marriage. It is a crime to our vaunted civilization that uncured possessors of the social diseases are permitted without let or hindrance to enter into matrimony, thereby begetting children ordained before birth to a life of physical or mental affliction or both, and the consigning of the woman to chronic invalidism. These facts and many more of equal import to the country, State and nation, Dr. Atkinson has spoken of so plainly that he who has eyes can read, and he who has the least intelligence and mind open to conviction will admit. Our intelligence demands that these social cancers be stamped out if the nation is to survive. The subject is of such vital importance that every man and woman should not only read, but meditate long and earnestly over what has been said. The picture is not over, but underdrawn. They are truths which must be squarely met and dealt with. This book will give you unsuspected light on the subject. Read it, and you will become a convert to the square deal to your fellow-man. "An epidemic of social diseases is the greatest menace to American society. Forty thousand children die annually in the United States as a result of inheriting these diseases. Thirty per cent. of all blindness and 80 per cent. of blindness in children under one year of age may be traced to this cause. These diseases are responsible for thousands of the cases which burden the poor houses, fill the jails and recruit the insane asylums." These are appalling facts; still, the public looks complacently on and does not lift its hand or raise its voice to correct the evil. The author discusses the social question forcibly and frankly, and makes an urgent appeal for a much-needed campaign of education along these lines. If you see a drunken man in the gutter, you pick him up. But what happens to an erring sister? Listen: "The disdainful injustice which has always fallen to the lot of an erring woman has been a fruitful source in keeping full the ranks of the outcasts. When a poor girl makes a mistake, what possible chance has she to reform? Christ forgave Mary Magdalene, but the door of hope is forever closed to the Magdalene of our time. The attitude toward her, of women in general, is cruel in the extreme. There is no open-hearted kindness for her; she is snubbed and shunned by her more fortunate sisters, and becomes the mark far too often of calumny and vituperation. Driven from those who were once her friends, she is forced even lower into degradation, and soon a police record, and when the record is once established, it follows her like a gloomy specter, even to the grave. As a police suspect she is never free from the

possibility of arrest, regardless of how honest her intentions to lead a better life." These are truths, bare, bald-faced truths, no matter how distasteful to our sensitive sensibilities. Only today I heard the following story which the relator vouched for as true, he being personally acquainted with the unfortunate girl. She was engaged to be married, and had submitted to her lover, who unfortunately died when she was about five months pregnant. The girl unfolded the story to her parents, people of prominence and education. They drove her from home. She left the city, gave birth to the child and then obtained employment in a store in a nearby city. Although she was giving absolute satisfaction, she was discharged when someone informed her employers of her past misstep. Removing to another city, she again found employment, to be followed after a little time by the same hounding and result. Again and again this happened. All hope gone of supporting herself decently, and in order to avoid a life of shame, she returned and threw herself upon the mercy of her parents, swearing she had been intimate with no man except her betrayer, and had since his death lived an upright and moral life. Again they spurned her. But for the succeeding two years, or until his death, her brother supported her. Nothing was then left her but to resort to a life of prostitution. She must eat and cover her body. This is the rough road that stretches out to the wayward girl, and this is the condition that the book hopes to see remedied by arresting the attention of thinking men and women. It is a strong appeal to a square deal all around. If this country is to survive, the conditions discussed so candidly by the author must be brought home to all right-thinking people. Education along these lines alone can accomplish this feat. Atkinson's efforts should go a long way toward accomplishing this seemingly unjumpable barrier.

TWELVE LECTURES ON THE MODERN TREATMENT OF GONORRHEA IN THE MALE. By Dr. P. Asch (Strassburg). Translated and Annotated by Faxton E. Gardner, M.D., Lecturer and Assistant Visiting Genito-Urinary Surgeon, New York Polyclinic; Assistant Genito-Urinary Surgeon, Bellevue Hospital, Outpatient Department, New York City. Illustrated. New York: Rebman Company. 1915. Cloth, \$1 net.

This little monograph presents in concrete form those methods found useful by the author during 15 years as a genito-urinary specialist in the treatment of acute and chronic gonorrhea and the complications. It is not an exhaustive treatise and for the purposes of the general practitioner so much better fills the bill, as it embraces mostly those little tricks which the author through a large personal experience has found beneficial in conquering the ravages of gonorrhea. Everyone is thoroughly cognizant of the fact that there are a variety of opinions concerning the best treatment of gonorrhea. One method gives the better results in the

hands of this physician and another in the hands of that physician. The author of this book has found a combination of the French and German teachings to give him the best results. And in the book before us sets forth the essentials of his technic as developed after a period of 15 years' specialization. No one will deny his assertion that gonorrhea is a communicable disease and can never develop without a previous contamination. He asserts that the belief that gonorrhea must develop in from three to five days after exposure is erroneous, as in his experience the cases in which the discharge appears within that lapse of time constitute hardly more than half of the cases. He has also known the urethral discharge to set in as early as 12 hours, or even less, after intercourse, when the gonorrheal infection in the woman is hypervirulent. Conversely, he states two or three weeks may elapse before the appearance of the urethral discharge, while an incubation period of from four to eight weeks is by no means as uncommon as generally thought. The second lecture is devoted to the abortive treatment of gonorrhea and the methodical treatment of acute gonorrhea by irrigations. For the former he employs argyrol with the desired result, with much gratification. The third lecture is devoted to general hygienic rules, the value of a good suspensory bandage and the value of internal medication. The rest of the book is given over to the prophylactic value of internal medication in anterior gonorrhea, syringes, size, shape and injections, posterior specific urethritis, two and three glass tests, irrigations of the whole urethra, diet, acute prostatitis, epididymitis, serum and vaccine treatment, value of urethroscopy and microscopic examinations, etc. So our readers will perceive that though the book is of but few pages, it contains an immense amount of useful information to the general practitioner.

EMBRYOLOGY, ANATOMY AND DISEASES OF THE UMBILICUS, TOGETHER WITH DISEASES OF THE URACHUS. By Thomas Stephen Cullen, Associate Professor of Gynecology in the Johns Hopkins University; Assistant Visiting Gynecologist to the Johns Hopkins Hospital. Illustrated by Max Broedel. Philadelphia and London: W. B. Saunders Company. Baltimore: The Medical Standard Book Co. Cloth. \$7.50 net. 1916.

This book represents an extended consideration of umbilical literature, together with the personal observation of the writer. In as much as no serious attempt has formerly been made to collect, collate and classify the various affections to which the umbilicus is heir, the work presents a colossal undertaking. It is as complete in every detail as the author could possibly make it, representing a study not only of the diseases of this structure, but also a thorough consideration of the anatomy, embryology and pathology of the umbilicus, omphalomesenteric duct and urachus. Unless one has made a serious study of diseases affecting these

structures, one would hardly believe that they are subject to so many and varied diseases. The book teaches the following lessons: The umbilicus is subject to many and varied lesions; epidemics of umbilical infections in the newborn has received an effectual quietus; the detection of a patent omphalomesenteric duct demands immediate operation; the development of a small, hard umbilical nodule in a person around middle age should arouse suspicion of malignancy of intra-abdominal character, and should direct one's attention to malignant disease of the gall-bladder or stomach, etc. Although in a general way it was known that the umbilical region was not immune to malformation and disease, still the knowledge of these affections were and are more or less hazy. This book should do much to dispel these illusions and set the obstetrician, pediatrician, internist and surgeon aright in the diagnosis and treatment. The subject is treated in a masterful style, the descriptions are complete to the last detail, and the illustrations are magnificent. The book should prove of immense value to the entire medical profession, as in every instance not only the symptoms of the incident disease, but also the appropriate methods of treatment are outlined.

GYNECOLOGY. By William P. Graves, A.B., M.D., F.A.C.S., Professor of Gynecology at Harvard Medical School; Surgeon-in-Chief to the Free Hospital for Women, Brookline; Consulting Physician to the Boston Lying-In Hospital. With 303 halftone and pen drawings by the author and 122 microscopic drawings by Margaret Concree and Ruth Huestis. With 66 of the illustrations in colors. Philadelphia and London: W. B. Saunders Company. Baltimore: The Medical Standard Book Co. Cloth, \$7 net. 1916.

This book thoroughly covers the entire field of gynecology, both the clinical and the operative. Although more than 700 pages are necessary to cover the field, yet no undue attention is given to any one aspect of gynecologic problems. Thus any condition under investigation can be obtained with the least possible loss of time and exertion. It is divided into several parts. Part I deals with the physiology of the pelvic organs, and with the relationship of gynecology to the general organism. This aspect of gynecology, the interrelation of diseases peculiar to women and their reaction on the other bodily systems, has not as heretofore received proper attention, either in textbooks or by clinical gynecologists. It is indeed, then, refreshing to note that a specialist of the standing of Dr. Graves realizes that to practice gynecology intelligently and successfully something must be known of the other structures of the body. The sooner specialists in general awake to this situation, the sooner will a fewer number of unnecessary operations be performed. The medical profession today, sad to relate, forgets that to be a good specialist entails that one first must be a good general physician. This book should go a long way toward remedying

this defect in medical education. It will teach those who read it the importance of correlating all branches of medicine and surgery. The body is not a machine made up of a number of separate and independent organs, but each and every system is materially influenced by the other. Those, then, who are engaged in general practice and include women amongst their clientele will find that this part of the book is of great value in arriving at a correct estimate of their patient's condition. Part II is designed principally for the student who is taking his initial course in gynecology, and includes a description of those diseases which are essentially gynecologic. Part III is devoted entirely to the technic of gynecologic surgery. The book is printed in clear type, and the illustrations are of a high grade of merit, both of which features should appeal to the prospective purchaser. But, better still, it is a model in the art of properly balancing the space devoted to etiology, diagnosis, prognosis, symptomatology and treatment of the affections to which those organs of womankind are prone. The operations recommended are particularly appropriate to meet the needs of the conditions calling them forth. But, best of all, the entire book will be found trustworthy in its statements, embodying as it does the latest ideas on gynecologic problems.

THE PROBLEMS OF PHYSIOLOGICAL AND PATHOLOGICAL CHEMISTRY OF METABOLISM. For Students, Physicians, Biologists and Chemists. By Otto Von Fürth, Professor Extraordinary of Applied Medical Chemistry in the University of Vienna. Authorized translation by Allen J. Smith, Professor of Pathology in the University of Pennsylvania. Philadelphia and London: J. B. Lippincott Company. Price, \$6.

As embodying a course of lectures to students by a very popular foreign teacher—a guide to thought rather than to the technicalities of the laboratory—this book may be termed a tour through the land of metabolism, conducted by one who, to a thorough knowledge of the land, adds the enthusiasm of a pioneer. Its purpose is to awaken enthusiasm and to stimulate inquiry in a department of science which until recently was almost unknown territory, and which even now has “great American deserts,” such as that which lies between the disappearance of the products of cleavage of the protein molecule when resorbed through the bowel wall and their reappearance when the end products begin to escape from the body. Even into these dark places the lecturer projects a ray of light. Moreover, as he leads us along he tells us where we may find more exhaustive studies of each subject on which he has touched. Wherever practicable the lecturer sums up the clinical value of the study in a concise and helpful way, as in his remarks on the treatment of gout and of diabetic coma.

MARYLAND MEDICAL JOURNAL

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BALTIMORE, APRIL, 1917

PREPARATION FOR WAR.

IN the January number of this JOURNAL we commented editorially upon the call for medical preparedness issued by the Council of National Defense. This call was especially directed to the medical schools, and was for the purpose of having instruction in military medicine and hygiene given to the students in the senior classes of the various colleges of the country. On January 6 a meeting of representatives of the medical schools was held in Washington, and it was unanimously agreed that such instruction should be given. Capt. Taylor E. Darby of the medical corps of the army has been assigned to give lectures on these subjects to the students of the Hopkins and the University of Maryland, and he has entered upon his work.

The crisis is now more acute than it was three months ago, and what was a probability then is almost a certainty now. We are on the very threshold of war, and it is necessary to mobilize the medical profession of the country in order to meet the emergency. On March 17 a meeting was held at the Medical and Chirurgical Faculty Building, which was addressed by Dr. Simpson of Pittsburgh, a member of the advisory committee, and by Major Noble of the army and Surgeon Murphy of the navy. Dr. Simpson's remarks were addressed chiefly to the necessity of organizing the profession into county and city committees, which should take stock of the medical resources of their respective localities, and which should recommend those who should become members of the medical reserve corps. He said that the civilian population must be cared for as well as the army, and that when a medical reserve officer was called into active service his practice ought to be looked after by his professional friends at home and returned to him when he retires from his service with the troops. This plan has been adopted by the English. In this country officers of the National Guard who have been on duty in Texas have suffered great loss, and upon their return home have had to begin anew the task of building up a practice—in other words, they have been penalized for their patriotism, and many have resigned in consequence.

Major Noble spoke of the needs of the medical department of the army and of the advantages of service in this corps. There is

a great shortage of medical officers in the regular army at this time, and with the increase in the strength of the army the need will become progressively greater. The pay of medical officers, while not lavish, is at least sufficient to keep them, and in the event of retirement for age or disability is continued at the rate of three-quarters of the salary of the rank at which the officer is retired. Major Noble especially emphasized the advantages of the medical service of the army as a vocation in which ample opportunities are offered to study and to specialize. The call for medical officers in the regular service is urgent, and he invites young physicians to take the examinations, which are held monthly. Also 25,000 medical men are needed in the medical reserve.

Surgeon Murphy of the navy also presented the needs of his arm of the service for medical officers. In the navy at this time there is a shortage of nearly 50 per cent. in the medical corps, and they need 300 regular medical officers and 500 reserve officers to man the ships that are in commission and under construction. Whether our army is called to fight in the war that is now ravishing Europe and distressing the whole world or not, it is practically certain that the navy will have to uphold the honor of the country upon the seas. Even as we write the news reaches us of the ruthless destruction of three of our ships by German submarines. The navy is offering great inducements to medical men to enter the service permanently, and its need is also acute. The medical reserve corps of the navy is also a desirable service.

Young men, your country calls you! Who will answer, "Here am I?"

MEDICAL AMENITIES.

AMONG the most pleasant incidents of professional life in Baltimore that have occurred recently was the joint meeting of the District of Columbia Medical Society and the Baltimore City Medical Society that was held on March 16. The program was furnished by our friends from Washington, and was largely of a military character. Major-General Gorgas and others, including President Goodnow, addressed the very large audience in an instructive manner, after which an excellent luncheon was served by the city society. Last year these societies exchanged visits, and we believe each was the recipient of much appreciated hospitality. The recent visit of the District society adds another link to the bonds of good-will and friendship that bind the two cities together. In the near future the Baltimore society will return the visit, and it is hoped and expected that a large delegation will make the trip.

Medical Items.

THE Surgeon-General of the Army announces that preliminary examinations for appointment of First Lieutenants in the Army Medical Corps will be held at convenient points the first Monday in each month. Full information concerning these examinations can be procured upon application to the "Surgeon General, U. S. Army, Washington, D. C."

The essential requirements to secure an invitation are that the applicant shall be a citizen of the United States, shall be between 22 and 32 years of age at the time of commission at the close of the Army Medical School, a graduate of a medical school legally authorized to confer the degree of Doctor of Medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training as intern after graduation.

Graduate physicians who are serving their internship and who meet the other requirements can be examined for appointment with the understanding that they will complete the required post-graduate hospital internship before coming to the Army Medical School.

Those who qualify at their preliminary examination and complete their hospital internship by July 1st will be ordered to the Army Medical School for the special session of the school commencing July 9. The regular session of the school will open on October 1st.

In order to perfect all arrangements for the examination, applications should be completed at the earliest practicable date.

There are at present 230 vacancies in the Army Medical Corps.

After July 1 there will be 222 additional vacancies.

THE State Bureau of Labor and Statistics has taken up the investigation and inspection of factories and factory workers, with a view to checking occupational diseases.

SINCE July last, with the Pershing column in Mexico, Dr. Duncan McCalman has resumed private practice at his home, 1822 Madison avenue. Dr. McCalman is a member of the United States Medical Reserve Corps and was one of the first to respond for duty at the beginning of the Mexican invasion.

A COURSE of lectures, under the auspices of the war department are being given during the months of March, April and May, to the fourth-year students of the Johns Hopkins Uni-

versity and of the University of Maryland, by Dr. Taylor E. Darby, captain, Medical Corps, U. S. Army.

The Hopkins lectures are given in the medical amphitheatre of the Johns Hopkins Hospital on Tuesdays and Fridays, at 7 P. M. The University of Maryland lectures are given in room 33 of the College of Physicians and Surgeons building, on Wednesdays at 3.30 P. M.

THERE was a joint meeting of the Baltimore City Medical Society and the Medical Society of the District of Columbia on March 16. Addresses were made by Surg.-Gen. Wm. C. Gorgas, M.D., U. S. Army; Col. Louis A. La Garde, Medical Corps, U. S. A., and by Maj. Robert E. Noble, Medical Corps, U. S. A.

An informal smoker was held after the meeting in honor of the Washington men.

PENDING the action of the Board of Managers, Dr. J. J. Roberts is acting general superintendent of the Maryland General Hospital, in place of Dr. Elmer Newcomer, who died after a brief illness.

DR. ASTLEY P. C. ASHHURST of the Episcopal Hospital, Philadelphia, addressed the Medical Society of the University of Maryland and the College of Physicians and Surgeons in the chemical amphitheatre of the University on "Tuesday, March 20.

Dr. Ashhurst was the guest of Dr. Randolph Winslow.

DR. HUGH HAMPTON YOUNG, director of the James Buchanan Brady Institute of the Johns Hopkins Hospital, has left for a six weeks' trip to California.

DR. JOHN C. HEMMETER, director of the Laboratory of Physiology of the University of Maryland, delivered the annual address before the Tri-State Medical Association, which opened at Durham, N. C., February 22.

DR. CLEMENT A. PENROSE was the host at a dinner at the Maryland Club on March 16 in honor of Maj.-Gen. William C. Gorgas, U. S. A., who afterward spoke at the joint meeting of the Baltimore and Washington medical societies at Osler Hall.

DR. JOHN D. BLAKE, commissioner of health of Baltimore, has returned to his desk, after an absence of two months, due to illness.

SHOULD the country ever be engaged in war, the Medical Department of the Army in calling reserve officers to the colors wishes to cause as little hardship and sacrifice to the reserve medical officers as may be consistent

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with the needs of the country. With this end in view, the department desires that you bring to the attention of the profession at large the necessity of the city, county and State medical societies organizing for the purpose of taking care of the practices of the officers of the reserve who respond to a call for service. In England this plan has proven of great benefit. The idea of the department is that the profession should organize upon a similar basis.

For example, should Dr. Jones be called to the colors, the local medical society, through its members, would take care of his practice during his absence. Upon relief from active duty his practice would be returned to him intact. Such a plan will cause no unnecessary hardship upon the officer responding to a call for service, while the absence of such plan would penalize the officer who gives his service to the country in a crisis. The department appeals to the patriotism of the profession to protect the interest of those of the profession who may be called to duty in war.

A SPECIAL meeting of the Baltimore City Medical Society was held Friday, March 23. An address was delivered by Hon. Sidney Ballou of Washington, D. C., and motion pictures were shown of "The Army and Navy."

DR. WILLIAM BULLOCK CLARK has returned from an extensive Western trip. He spent the greater part of his vacation in Southern California.

A SCIENTIFIC program was arranged for the meeting of the Baltimore County Medical Association at the University Hospital.

The program included exhibition of cases by Drs. Randolph Winslow, Frank Martin, Hiram Woods, J. Mason Hundley, Gordon Wilson, J. Irving Spear, J. W. Holland, Howard Mardies and Homer U. Todd.

THE general alumni association and the alumni council of the Johns Hopkins University have begun a campaign among the 4000 students to raise a half-million dollars, the income of which is to be used for the next three years to apply to the annual deficit of the University.

DEATHS.

ELMER NEWCOMER, M.D., Baltimore, University of Maryland, Baltimore, 1913, aged 27, a Fellow of the American Medical Association, and superintendent of the Maryland General Hospital, died March 11 from septicemia, due to an autopsy wound.

OSCAR SAMUEL OWENS, M.D., Richmond, Va., University of Maryland, Baltimore, 1905, aged 37, a member of the Medical Society of Virginia, for many years local surgeon to the Southern Railroad, died at the Retreat for the Sick, Richmond, February 8.

JAMES CYRUS BLACK, M.D., Harrisburg, N. C., University of Maryland, Baltimore, 1886, aged 59, a Fellow of the American Medical Association, died at his old home in Pioneer Mills, N. C., February 4, from acute gastritis.

JOHN EDWARD HOOLE, M.D., Somerville, Mass., College of Physicians and Surgeons, Baltimore, 1903, aged 49, a Fellow of the American Medical Association, died at his home February 15 from heart disease.

ANDREW JOHN CRIGHTON, M.D., East Hartford, Conn., College of Physicians and Surgeons, Baltimore, 1891, aged 52, died at his home, November 28, 1916, from chronic nephritis.

BENJAMIN RUSH RIDGELY, M.D., Warren, Md., University of Maryland, Baltimore, 1847, aged 93, died at the home of his son in Baltimore, from pneumonia.

JOSEPH FORD THOMPSON, M.D., Washington, D. C., University of Maryland, Baltimore, 1857, aged 79, a Fellow of the American Medical Association and of the American Surgical Association, professor of anatomy and professor of surgery in Columbia Medical College, professor of surgery, and later emeritus professor of surgery in George Washington University, surgeon to the Providence, Emergency, Children's Garfield Memorial and George Washington University hospitals, Washington, and the Columbia Hospital for Women, acting assistant Surgeon United States Army during the Civil War, died at George Washington University Hospital February 1.

HARRY WILBUR STONER, M.D., Baltimore, University of Maryland, Baltimore, 1907, formerly a Fellow of the American Medical Association, first assistant bacteriologist for the State Board of Health, associate professor of bacteriology in his Alma Mater, in charge of the laboratories of the Maryland General, and Presbyterian Eye, Ear and Throat hospitals, died at his home February 4 from pneumonia.

WILLIAM S. MCPHERSON, M.D., Thurmont, Md., University of Maryland, Baltimore, 1848, aged 92, said to have been the oldest living Alumnus of the University of Maryland, died at his home in Auburn, four miles south of Thurmont, January 15, from senile debility.

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HERNIAS OF THE URINARY BLADDER.

By Aimé Paul Héineck,

Professor of Surgery, Chicago College of Medicine and Surgery; Surgeon to Rhodes Avenue, Jefferson Park and Frances Willard Hospitals.

THE permanent or temporary escape of a part or the whole of the urinary bladder, through any of the usual or unusual hernial orifices, is uncommon. Nevertheless, many cases have been published and a much larger number have been allowed to pass without record. In a long series of hernia operations every surgeon is certain to meet with some instances of hernia of the bladder. The urinary bladder in part or in its entirety is present in 1 per cent. of all hernias.

Though the term hernia implies the presence of a hernial opening, of a hernial sac, sac-contents and sac-coverings, we know that in many hernias of the urinary bladder the sac is either incomplete or totally absent.

To designate the clinical entity under consideration, we fail to find any other term more appropriate, more sanctioned by long usage than that of hernia of the urinary bladder.

Many operators have unknowingly punctured, incised, ligated or removed a herniated bladder-process and then closed the hernial canal and operative wound in the usual way. Bladder protrusions have been excised by mistake for hernial sacs, or stitches used to close hernial canals have been passed too deeply and found at the necropsy to have caught the bladder.

An analysis of all the vesical hernias reported with sufficient data in the English, French and German language from 1896 to 1914, inclusive (literature to which access can be had at the John Crerar Library, Chicago, Ill.), and also of some unpublished personal cases (in all 159 patients, representing 164 vesical hernias), justifies, in our opinion, the following conclusions:

1. The urinary bladder, in part or in its entirety, may escape from the abdominal and abdomino-pelvic cavities through any of the uncommon or common hernial orifices of the lower abdominal wall.

2. Hernias of the urinary bladder occur in both sexes, at all ages, and in all races. They are congenital or acquired, recurrent, recent or of some standing; almost always unilateral, very

rarely bilateral. Like other hernias, they vary in shape, size, rate of growth and in the discomfort and disability which they entail.

3. In the female, vesical hernias occur in nulliparae, primiparae and multiparae; they occur previous to, during or after gestation and between gestations. They neither interfere with gestation nor disturb parturition.

4. According to anatomical site, vesical hernias are designated as hernias of the linea alba, of the obturator, femoral or inguinal regions. Anatomical relations justify the further subdividing of the two latter types into interstitial or intraparietal, direct or indirect, complete or incomplete, pudendal or scrotal.

5. The relation of the herniated bladder-process to the serous membrane lining the peritoneal cavity is well expressed by the terms intra-peritoneal, para-peritoneal and extra-peritoneal. These designations are serviceable from the viewpoint of etiology, symptomatology and treatment.

6. According to clinical manifestations, hernias of the urinary bladder are reducible, irreducible, inflamed or strangulated.

7. A vesical hernia may be single, double, or one of two or more hernias located on the same or opposite side of the body, having dissimilar contents and presenting like or unlike anatomical and clinical characteristics. Thus, the same patient may present an inguinal cystocele and a femoral epiplocele, a reducible femoral vesical hernia and an irreducible inguinal intestinal hernia. Case reports of an inguinal vesical hernia on one side coexisting with an inguinal enterocele, epiplocele or entero-epiplocele on opposite side of the body are not uncommon.

8. As etiological factors, in the causation of vesical hernias, the following are foremost:

a. All conditions that tend to increase intra-abdominal pressure.

b. All conditions, congenital or acquired, that weaken the abdominal wall.

c. All diseases of the lower urinary organs that impair the expulsive force of the bladder or abnormally hinder the outflow of urine.

d. Pre-existing hernias and hernial sacs of pre or post-natal origin.

9. The pre-operative signs and symptoms may be unmistakable, vague or absolutely wanting. In addition to such symptoms as are common to all other hernias, vesical hernias present peculiar suggestive and positive manifestations of their existence. Chief among the former are such disturbances of micturition as the following: Frequent, painful and difficult urination, vesical tenesmus, urgent desire to urinate caused by pressure upon hernial swelling and two-step urination. Chief among the positive manifestations are: A hernial swelling, increasing in size with urinary retention and decreasing with urination; increasing in size with air or water distention of the bladder, and decreasing upon withdrawal of these agents; passage of a sound into the her-

niated bladder-process by way of urethra and bladder; cystoscopic demonstration of the vesical orifice of the herniated bladder-process.

10. The herniated bladder-process may be the sole content of the hernial swelling, or merely one of the associated contents. In addition to a bladder-process, a hernial swelling may contain a part of one or more of the following organs: Ureter, fallopian tube, ovary, appendix vermiformis or appendix epiploicae, omentum, and small or large intestine.

11. The herniated bladder-process may be free or adherent to surrounding tissues or organs, structurally normal or present degenerative, inflammatory or neoplastic changes; may be the seat of atrophy, hypertrophy, catarrh, gangrene, tuberculosis or carcinoma, and may or may not communicate freely with the general vesical cavity. The herniated process of bladder may contain one or more calculi.

12. The vesical hernia may be the sole existing anomaly, or it may be one of two or more, congenital or acquired, pathological states, having or not having any relationship of cause or effect to the hernia (cryptorchism, vaginal cystocele, prolapsus uteri, prostatic hypertrophy, etc.)

13. Truss treatment for hernias of the bladder is not curative, is often productive of discomfort and may injuriously affect the structure of the bladder-wall.

14. In patients over ten years of all hernias, irrespective of anatomical site, clinical condition or contents, should, in the absence of a constitutional state contraindicating operations of election, be subjected to an operation for radical cure.

15. Clinical conditions so closely simulating hernias of the urinary bladder that a positive diagnosis without operation appears impossible, should be subjected to operative treatment. Only benefit can be derived from adherence to this rule. A diagnosis is established and a cure is effected.

16. All hernias of the urinary bladder, irrespective of sex, age or social condition of patient, irrespective of size, shape, anatomical site or clinical type, call for operative treatment. Operative treatment is free from danger and is curative. The only contraindications to operative treatment are extreme old age and the co-existence of a pathological state or states contraindicating operations of election. Operative treatment is the only rational treatment of hernia in the adult.

17. Operative intervention is indicated in all incarcerated and in all strangulated hernias of the bladder.

18. In all hernias the ideal time for operation is previous to the development of degenerative or other pathological changes in the herniated organ or organs and previous to the occurrence of any of the various complications incident to hernias.

19. Women who suffer from any form of hernia should be carefully watched before, during and after their confinement, so as to prevent or rather minimize any undue strain upon weak

regions of the abdominal wall. These women, at the close of lactation or toward the end of the first year following their confinement, should, in the absence of contraindications, be subjected to an operation for radical cure of the hernia. In the female, the inguinal rings are comparatively small. They can without inconvenience to the patient be closed.

20. The most popular and efficient modern hernia operations permit a full view of operative field and allow such a careful examination of hernial rings, canals and surrounding structures that a prolapsed or herniated bladder-process rarely escapes detection.

21. In inguinal and femoral hernia operations, after careful opening and isolation of the sac, see that the latter consists preferably of peritoneum only, and that its neck be freed from all other structures. Neck of sac should not be twisted, as by so doing the bladder is drawn toward the hernial opening and is liable to be included in the ligature. Necrosis and peritonitis result therefrom.

22. In the course of a hernia operation, if, after opening the sac and reduction of its contents, there appears a second sac, it is not to be opened, unless the introduction of a sound in the bladder shows the complete independence of this sac from the urinary reservoir.

23. In hernias of the urinary bladder, first expose and free the herniated organ or organs, and then reduce it into the abdomino-pelvic cavity. Follow this by suppressing the hernial sac if one be present, and then strengthen, according to an approved method, the weakened hernial area. Resection of the herniated bladder-process is only exceptionally indicated. When performed, it calls for immediate reconstitution of the urinary reservoir.

24. During hernia operations, the wounding of the urinary bladder can, to a large extent, be prevented by careful operating and by keeping in mind that this clinical entity occurs.

25. Wounds of the urinary bladder inflicted during the course of hernia operations give a good prognosis if they be immediately repaired and if the post-operative treatment be instituted appropriately. In the repair of bladder-wounds, two or three layers of continuous or interrupted absorbable sutures give satisfactory results. Bladder suturing is to be followed by refection of the abdominal wall of the hernial area.

26. If within 24 to 48 hours after a hernia operation on a healthy subject the catheterized urine contains blood, determine the origin of the blood. If a bladder-injury be present, open the hernial operative wound or laparotomize or do both and repair the injury.

27. The mortality of operations for the radical cure of hernia, if performed at an opportune time by a rapid and skillful operator, competently assisted, is practically nil. Coley operated 1000 consecutive cases of hernia without a single death.

28. The operative treatment of hernias of the urinary bladder is highly satisfactory.

FUNCTIONAL AND ORGANIC DIFFERENTIA IN NERVOUS DISEASES AS SHOWN BY CASES.

By Tom A. Williams, M.B., C.M., Edin.,

Washington, D. C.

Lecturer on Nervous and Mental Diseases, Howard University; Corresponding Member Soes. de Neurol. et Psychol., de Paris; M. Nat. Acad. of Med. of Rio de Janeiro; Neurologist, Freedmen's and Epiphany Hospitals.

It greatly simplifies the diagnosis of nervous diseases to bear in mind during the examination of the patient the exact nature of the object in view by asking oneself some such questions as the following:

Does the sign or symptom discovered indicate alteration of structure of a neurone; does it point to impairment of neuronal activity by a chemical process, or does it show that the aberation of function is produced by ill-directed aims in the patient's relationships, a mal-adaptation of emotional or mental attitude?

Some physical signs unequivocally demonstrate morphoriological change in the nervous system; others as unequivocally point to psychological perturbation. Every well-trained neurologist is conversant with these, and should not make mistakes in differentiating one from the other.

But the neurological disturbances from chemical perversion are far less understood by neurologists, and very few of them have made themselves conversant with the modern work on the metabolic disorders which so often lead to what at first sight looks like a primary neuroticism and is often treated as such for a considerable time, much to the patient's detriment.

It would lead me too far to go into details concerning these disorders, for the material of this paper is already overcharged.

DIFFERENTIA MUST BE PRESENT OR A PSYCHOGENETIC SITUATION SHOULD NOT BE AFFIRMED AS CAUSE.

The Case—A woman was sent by a well-known internist with a statement that she was a psychasthenic, and with a request that I treat her by psychotherapy.

The basis for this diagnosis had been the fact that the patient was afraid to go out alone. The reason for this was the fear of dizziness.

But on examination I found that the real cause of this fear was not an obsession as to whether or not the attempt at walking would produce dizziness, with a phobia of going out in consequence. Nor were there any psychasthenic stigmata, such as morbid anxiety, monomanias, phobias or tics. Nor was there any extraneously originating idea, such as characterizes hysteria, that dizziness upon walking was inevitable.

The *real explanation* of the woman's fear was that she some-

times becomes so dizzy as to fall and hurt herself. It was prudence, and not phobia, which actuated her.

That being the case, physical conditions were sought to account for the dizziness. Of course, insular sclerosis was thought of, but no such signs as nystagmus, intention tremor, modified reflexes, papillary pallor, sensory exhaustibility or speech disturbances were present. There was, however, a marked bruisability of the tissues and a tendency to edema; the blood pressure was very low, and asthenia was considerable.

The inference was drawn that the vertigo was due to disturbances of the vascularity of the semi-circular canals on account of an unstable capillary circulation, although rotation and douching showed no abnormality.

The giving of adrenal gland substance was resolved upon on account of its pressor effect. The therapeusis was successful, and the attacks ceased immediately.

The Lesson—This case illustrates a most important differentium in clinical neurology, in that a psychotic disorder should never be diagnosed by the superficial aspect of the presenting symptoms, however conspicuous. As in all clinical situations, the mechanism of the presenting symptom must be understood before its adjudication.

In this case, unwillingness to go out was not a phobia of psychasthenic type, as the family physician supposed; nor was it a hysterical phobia, as it might have been. But even had an interpretation not been forthcoming, that would have been no reason for diagnosing a psychoneurosis. To do this, the method of exclusion is an abominable anachronism. For the positive diagnosis, differentia of a psychogenetic disorder are just as legible to him who has learnt to read as are the pathognomonic features of such familiar diseases as tuberculosis, diabetes or organic heart disease.

THE DIFFERENTIA BETWEEN PSYCHASTHENIA AND CONFUSION.

A psychasthenic is always pervaded by an undue anxiety or timidity founded upon fear of a dreaded situation or self-distrust. It is part of the character, and not a mere episode such as occurs during toxicosis or infection.

However, a history of previous good adaptation is not an adequate differentium, although it is so regarded by many; for as a matter of fact the majority of psychasthenics conceal their state for long time from their friends. The true differentium is the presence or absence of confusion. If this is not present, the patient's ability to see clearly and analyze quickly is conspicuous even in the presence of the intense emotional disturbance he feels. On the contrary, if a toxic state is present even although hallucination or ideas of reference have not formed, proper tests reveal slowing of thought or intellectual confusion in complex trains of thought; so that discrepancies in mentation will occur in proportion to associational difficulties, and quite apart from the patient's affective attitude. The psychasthenic is in marked contrast, in that asso-

ciational richness only stimulates him to an effort of which he is entirely capable when his interest is awakened in anything beyond his immediate obsession, and it is only concerning some aspects of this that the thought associations may be slowed.

Of course, when a toxicosis can be detected by physical tests, and there is a clear history of change of mentation, the diagnosis is easy; but in the more subtle cases the differentia can be established only by those having minute knowledge of them and the technique required for their elicitation clinically.

A test sometimes used is the result of psychological reconstruction in therapeutics. But a favorable result of this does not, of course, enable one to say that physical conditions have not occurred, and that their removal is not merely coincident with the therapeutics rather than its consequences. For we must keep in mind that the causes of confusional states tend to spontaneous recovery as resistance against infection is established, or as the effects of toxins are slowly removed by the reparative body processes. Of this, a familiar example is the recovery from a polyneuritis, often a long proceeding.

The *history as a differentium is particularly unreliable* when a neurotic individual presents himself for the purpose of getting rid of an incommoding symptom of a kind new to him. The temptation for the physician to regard it as merely a fresh manifestation of neuroticism must be very great, if I am to judge by a number of instances where patients have been referred by their physicians because of their failure to benefit them. This is very often on account of the failure to make a neurological and psychiatric survey before treating the patient. A few instances may make clear the issue.

A CASE WHICH MISLED.

An officer was sent me because of tremulous speech and hands. He had always been of a quick temperament, and had been a free drinker. The service physicians believed that these factors were responsible for the tremor. But as he had been under treatment for three months without any improvement, and as the tremor was not that of the drunkard, it being coarse and not giving the Quinquad sign,* and as its onset was rather sudden, as his legs had been unsteady, and he sometimes struck the step in mounting the stairs, and the gait stamped somewhat, as his speech was hesitating and sometimes stumbled, and as he had no neuritic pains, and that examination indeed showed diminution of the deep pain sense, great exaggeration of the deep reflexes, an impaired diadochokinesis, unequal oblate pupils, with diminished and only fugitive reaction to light, I decided, although the Wasserman reaction had been found negative, that syphilis was the source of his symptoms, although he strenuously denied having this. But the service doc-

*This consists of a rapid, regular series of minute crepitant oscillations felt when the examiner's fingers are pressed against those of a patient. It is strongly indicative of toxic states. To one who has observed it, it can never be mistaken for the coarse unsteadiness of movement which occurs in lesions of the central nervous system.

tors refused to accept this diagnosis, in spite of a marked lymphocytosis of the cerebro-spinal fluid (28 cells per cubic millimeter) which I reported to them. Accordingly, although he consented to receive salvarsan twice, the skepticism of the service doctors prevented further treatment, and the patient developed paresis and died in a fit before three years had passed.

The differentia in this case were perfectly clear, in spite of the entire absence of intellectual defect when I examined him, but they were outweighed by an unjustifiable reliance upon the patient's history, and an absent Wasserman reaction, as well, of course, as by an ignorance of the significance of neurological signs.

The case is a striking illustration of the fact that the rapid onset of tremor even in a neurotic individual is significant of organic disease, and should never lightly be attributed to an increase of nervousness. It was not the tremor, however, but the physical signs, which led to the diagnosis, a comparatively easy one to an experienced neurologist.

But in the case which follows the nature of the tremor was so deceptive and the physical signs so equivocal that the combination misled two New York neurologists into a diagnosis of insular-sclerosis.

THE DIFFERENTIA OF SEVERE INSULAR SCLEROSIS.

A woman, aged 39, was sent to me in 1912 from New York State because of what had been diagnosed by several neurologists as multiple sclerosis. Her physician wrote asking if I could suggest some treatment or perhaps modify the diagnosis.

The patient declared that she had been intensely nervous since two and one-half years; this had consisted of palpitation and a feeling of dread, great unsteadiness of the hands, voice and gait. In addition, there was marked incontinence of urine and extreme obstipation, with occasional incontinence. She was dizzy when tired, and the eyes were blurred.

Examination showed great exaggeration of the tendon reflexes, and the great toes did not extend upon stroking the sole of the foot nor by other stimuli used to provoke that reflex. But that there was some interference with the pyramidal system was shown by absence of reflex flexion of the toes, all of them remaining immobile to the stimuli of reflectivity.

The absence of the sign of Babinski in a patient whose illness was of such gravity and duration made me suspect that insular sclerosis might not be present after all, and on proceeding to the examination of the eyes my doubts received further support; for no nystagmus occurred even during rapid intentional movements, and the optic papilla showed no atrophy, although slightly pale. The absence of three signs of such importance compelled me to contradict the previous diagnosis, in spite of the presence of intention tremor, scanning speech, impaired diadokinesis, a slight moria, such as often occurs in insular sclerosis and a diminution of vibration sense in the legs.

But it is pretty well known to neurologists that the symptoms of insular sclerosis may be simulated, even to a greater degree than was shown by this patient, when there is a diffuse chronic inflammation of the nervous system produced by the troponema pallidum. This I suspected to be the condition of this patient.

Accordingly, lumbar puncture was done on February 13, when 30 c.c. of fluid very rapidly came, and Dr. Nichols reported that there were 7 lymphocytes per c.m. This slight lymphocytosis still left us in doubt, for an increase in cells has been reported in cases of insular sclerosis.

However, I put the case to the patient, who decided to permit the experiment. So I injected a full dose of salvarsan into a vein on February 22. This rendered her almost helpless for about two days. Then she began to handle herself much better, and on the 28th she also felt much better and the motility still further improved. The reflexes and sensibility were as before, but the intention tremor had greatly diminished.

So on March 7 the spinal fluid was again examined and a luetin test was begun by Dr. C. A. Simpson. The cells had diminished to 5 c.c. This puncture caused great pain, headache and nausea. After this cleared up, salvarsan was again given on March 15. Within 24 hours her legs gave way twice, but a great improvement again followed in walk and speech. The intention tremor disappeared, and her sleep became restful. The Wasserman reaction remained negative as before, but a papule rapidly formed where luetin had been injected, and when I saw her five days after the salvarsan a broken pustule was present which Dr. Simpson pronounced a luetin reaction.

The following letter was sent to her doctor, who expressed his pleasure thereat in stating that the case had baffled several neurologists:

"Mrs. B. is returning, after receiving salvarsan twice and appearing much improved. I think we may say the diagnosis is positive now, for the reaction to luetin which Dr. C. A. Simpson declares to be pathognomonic, declared itself after the second injection of salvarsan, although it had been quiescent more than a week before that. This, in connection with the puerperal history, the lymphocytosis of the spinal fluid and the absence of some of the most characteristic signs which might be expected in true insular sclerosis, decides me. I recommend that you continue treatment by salvarsan and mercury for some months, although I do not believe that full restoration of function will occur now, as there must be considerable destruction of nervous tissue. I have not named the diagnosis to the patient. Please accept my thanks for sending me a problem of such interest and for the pleasure of having been able to afford some benefit."

COMMENTARY.

The low lymphocyte count in the presence of such severe symptoms and the relative poverty of radicular signs indicate that the pathological process causing the symptoms is within the central

nervous system in the main, and not merely an involvement of the roots by an extension from the meninges into their coverings of syphilitic leptomeningitis, as is the case in tabes dorsalis. There are, in all probability, foci of ill-nourished, if not necrotic tissue, scattered throughout the central nervous system, perhaps as a result of endarterial proliferation, which may have led in some cases to obliteration. In proportion as this is incomplete and the tissue elements have not perished, there will be restoration of function as tissue activity is resumed upon the removal of exudate from arterial wall or connective tissue by the destruction of its cause, the *treponema pallidum*, by salvarsan or mercury.

In the presence of lesions of this character the signs may lack all systematization, as in this case.

In insular sclerosis it is rare that the mid-brain or the pyramidal tract escapes when the process is at all extensive. The absence of nystagmus and of extensor response of the toes immediately made me suspicious of this diagnosis. The experimental therapeutics confirmed my doubts; but unless the luetin reaction be regarded as pathognomonic, only an examination post-mortem can give absolute proof; and in some cases even this has failed to distinguish between disseminated sclerosis of the usual type and that sometimes believed to occur as the result of syphilis.

THE MEANING OF NECROPSY FINDING.

It must not be forgotten that post-mortem appearances are, after all, merely the results of the reaction of the body to insult, and that these results both resemble one another and vary so much that few of them are pathognomonic for any particular invasion. For instance, even plasma cells, so characteristic in paresis, merely denote chronicity, and may occur under many conditions quite irrespective of syphilis.

THE SIGNIFICANCE OF LABORATORY FINDINGS.

Again, during life the reactions of the body to the particular noxa are by no means uniform; otherwise, we should not find the Wasserman reaction absent in nearly 40 per cent. of tabetics, and we should not find it present as a reaction to the organism of leprosy.

In conclusion, it cannot be too often insisted upon that the absence of the reactions which are detected by the usual laboratory tests for syphilis is by no means conclusive of the absence of that disease; the failure to find them merely indicates that, at that particular moment, the patient is not reacting strongly enough in that particular way. The results of previous reactions, as manifested by present clinical signs, furnishes a basis for a diagnosis in every way as potent, and no more lacking in that objectivity which it is the fashion to claim pre-eminently for certain methods conducted in the clinical laboratory. A moment's reflection shows the fallaciousness of this claim; indeed, a non-reacting pupil, an absent knee-jerk, a positive great toe sign, are no less objective than blood-cell count and diazo reaction, or an Abderhalden test; fur-

thermore, these latter are much richer in liability to false interpretations, as well as errors in observation, than are clinical signs in the hands of an experienced neurologist.

THE ADJUDICATION OF WHAT IS FOUND IN THE LABORATORY.

In this case the laboratory reactions provided no assistance. It was knowledge of the clinical history of diseases of the nervous system which accomplished the diagnosis. The over-reliance upon laboratory tests is a common temptation nowadays, as, for instance, in a case where an infected finger was regarded as a blastomycosis on account of the histological and bacteriologic findings. Valuable time was thus lost, especially as cutaneous exanthem and faucial erythema were strongly denied. Clinical examination later showed the presence of both these, and a Wasserman test conconfirmed the diagnosis of syphilis. This patient was himself a physician, unusually intelligent and well informed. If in an instance like this history can be so deceptive and the laboratory so misleading, are we not forced to the conclusion that the first differentia of disease are dependent upon the care and knowledge brought to a physical examination, and from this I do not except the exploration of the mentality, including the emotions.

It is only the misuse of the laboratory with accompanying neglect of the clinic that need be decried, for no one more than the student of nervous diseases comprehends the tremendous services provided in the laboratory, not only post-mortem, but in diagnosis during life and in treatment.

For instance, in the differentiation of the dementias, laboratory syphilology has been of almost incredible assistance. For instance, it could hardly have been believed that at Danvers before the Wasserman was used that of 28 cases affirmed to be parietic, 20 are now definitely classed otherwise, and of 17 cases where paresis was the probable diagnosis, not one proved to be so. Dementia precox is the real condition of many of these cases. (Quoted from L. G. Lowry, J.A.M.A., Pg. 1582, Vol. 66, 1916.)

That better diagnoses than this can be made clinically nowadays at least, we have a right to believe. But the speed and comparative certainty of a specific biological test prevents much loss of time, many doubtful diagnoses and some serious errors. The only protest we have a right to make is against the looking upon of a laboratory test as one of a superior order, a better differentium. However, its only superiority is that it may be more easy to observe and more simple to obtain uncomplicated than is the clinical reaction. If as much attention were given in the schools to the technique of clinical neurology as is now given to laboratory technique, a great many serious errors of diagnosis would be obviated. For instance, the proper method of eliciting Babinski's toe sign, the proper procedure for ascertaining the pupillary light reflex, the proper method of examining the sensibility, were conspicuously absent in the American neurological clinics which I visited on my return from Europe in 1907.

THE DIFFERENTIA IN SENSORY DISTURBANCES.

Unilateral Losses—Organic hemianesthesia may resemble that of functional type when the lesion is situated in the cortex, corona radiata, thalamus or lemniscus; that is to say, the defect will involve all modalities of sensation in the same area; but the organic form differs in its incompleteness, being most marked at the extremities and in the fact that it passes or falls short of the middle line, although the loss of sensibility there is only partial. When the lesion is near the optic thalamus, hemianopsia may occur. It is always accompanied by hemiataxia and astereognosis of the cerebral type, and usually by very painful subjective sensations, particularly in the shoulder joint. The preponderance is upon the sense of attitudes, the condition is nearly always preceded by fugitive hemiplegia, and is often followed by a posthemiplegic choreoathetosis.

When cranial nerve symptoms are added to the foregoing, it can safely be said that the lesion is in the mid-brain or pons; in the latter it causes trembling, cerebellar asynergia, dysarthria, and palsy of associated lateral movements of the eyes, with nystagmus on looking up or down. A hemianesthesia of subcortical origin requires a lesion so vast as to involve the motor projection fibers, and is therefore accompanied by a marked hemiplegia.

Psychogenetic Type—The hysterical anesthetics are characterized by being completely removable by suggestion, and susceptible of returning under the same influence at the will of the operator. (Babinski, Williams.)

The history of their onset is generally traceable to imitation, or perhaps even more often to unguarded medical examination, as in the case in which the doctor gleefully related: "The boy had no anesthesia at first, but I examined him most carefully the second time and found the foot anesthetic; on the third occasion the leg became so, and the defect then extended up the whole limb." The stigmata are valuable corroboratively, but only as proof of suggestibility, beyond which they have no validity. The pupillary reaction to pain occurs in organic cases as well as functional cases, unless that particular afferent path is interrupted.

The fact that the anesthesia is most marked in the most paralyzed limb affords no real help to diagnosis; for this is apt to be the case by suggestion as well as by morphological contiguity. Nor is variability so safe a criterion as generally postulated, for Egger's researches have shown how variable modifications of sensibility often are even when due to organic changes.

Textbooks are also erroneous in stating that distribution of disturbed sensation in spots is probably hysterical; for, as a matter of fact, Déjerine has shown that such anomaly is very common in tabes and other radicular affections, and occurs also in multiple and mixed sclerosis of the cord. Involvement of all the special senses is hardly possible from purely organic causes, although the

commonness of organic "point d'appui" for any hysterical clinical picture should prevent us from denying any organic lesion, even when hysterical factors bulk largely in the case.

Radicular Anesthesias—A type of esthetic perturbation very important from a diagnostic point of view is the radicular, found conspicuously in the symptomatic sciaticas, and enabling one to localize, and often, by so doing, to infer the nature of the pathological process at work. The radiculitis of tuberculous or syphilitic pachymeningitis is of this kind. The diagnosis of these conditions from the symptomatic sciatica of spondylitis or other arthritic lesion is made by the sensory loss being so clearly radicular. Of course, one must exclude referred pains of visceral inflammation and of joint conditions themselves by the use of Lesègue's sign and the watching of the opposite leg, which is drawn up, too, when a true sciatic irritation is produced.

In the upper extremity band anesthetics are very common, and again signify a radicular affection. Through the embryonic twisting not being so great as in the lower extremity, nerve trunk involvements are less readily distinguished from those of the roots. Acroanesthesia of only a few fingers should lead to a careful investigation of objective changes in the sensibility. They may be due to angina pectoris, supernumerary rib, tabes, spondylitis, tuberculous pachymeningitis, etc.

In the neck and face also an esthetic modification of radicular distribution often enables a distinction to be made between simple neuralgia and involvement of nerve roots.

The Conspicuous Symptom May Misguide—As a differentium, the conspicuously presenting symptom is rarely reliable, and the more conspicuous it is, the greater is the risk of misguidance. Psychogenetic cases are particularly apt to superficially resemble those due to physical disorder. This is especially true of the tics. Impulsions are less apt to misguide, but they may do so, more particularly in criminal cases, more especially where an alienist is concerned who has become habituated to the deteriorating psychoses. But in the case which follows neither criminality nor an alienist were in question, and the erroneous diagnosis had been made by an eminent professor of internal medicine, from a want of searching into the psychological differentia which were at the root of the patient's condition.

CASE I—*Hysterical impulsiveness to fears causing attacks, mistaken for epilepsy, due to suggestion of danger by the mother's timidity; lack of inhibition; cure by giving insight and teaching self-control.*

A boy of eight was seen with Dr. A. L. Tynes at Staunton, Va., in the autumn of 1911. The preceding May he had developed what his parents called hallucinations, which occurred when he was alone only, for he would go errands and play about if he knew he was in sight of anyone at all. There were no night terrors, although he feared to go to bed alone, and his mother and

father always accompanied him upstairs. Whenever he was alone a spell would occur. The hallucinations were accompanied by a loud cry and a twisting backwards of the neck and contortion of the body. He was very rarely still, wriggling about nearly all the time in an excitable fashion. His father and maternal uncle are declared to have had similar attacks in childhood. But it could not be ascertained that the parents had not spoken of some of these before the boy. The mother was overanxious, hysterical, and very uneasy when the boy was out of her sight, of which the boy was well aware.

Mechanism—Examination showed no physical signs of disease of the nervous or any other system. In anamnesis I found him to be a very sensible little fellow, and I ascertained that it was a snake which he usually saw, although sometimes a wild beast would be seen. His shout was really the name of the animal he saw. He could not describe the snake except to say that its head was like an eel. He remembered well the first such occasion of fright, and the creature was not then a snake, but a rooster. He declared that he was never actually afraid of any animals. Indeed, on one occasion, wearing a red sweater, he chased a bull and on another went into the cellar to look for the bogey man. He said that his only fear was that of being whipped by his father when he was naughty, and that of this he was "not very frightened."

I could not, in the short time at my disposal, penetrate the psychogenesis completely. My question, however, soon showed that the hallucinations were not true ones; for when I asked the boy if when he looked around there was really an animal jumping on his shoulders, he had to reply "no," and that he never actually saw, felt or heard what he feared. He then spontaneously declared: "I reckon my imagination gets away with me."

Diagnosis and Prognosis—Familiarity with the mechanism of terrors of children enables one to interpret this boy's case as a phobia against being alone, produced by the foolish anxiety of his mother. This affective state was an induced one, therefore, produced by the idea of some "dreadful consequences" which might occur to a little boy when not protected by his elders. But the morbid reaction had become a habit, so that even though the initial cause was suppressed, training would be required to overcome the facile inductibility of the terrors. Inhibition of his undue impulsivity should also be undertaken.

Treatment—Accordingly, the following procedures were outlined and the reason for them clearly explained to the boy and to his father. Firstly, he must gradually accustom himself to go out alone; first for half a block, then for a whole block, and finally around the corner. While doing this he could hold himself in hand, his attention fully awake to the need of manly behavior and the importance of recovering from his timidity. Secondly, he must learn to go to sleep without anyone else in the room, remem-

bering what a nuisance is a boy who cannot forego keeping one of his parents constantly at home in the evening. Thirdly, he was shown exercises in slow movement and immobilization, by which he could suppress the wriggling tendencies of his limbs and body. His mother should be dealt with rationally, too. As a result, no further attacks have occurred. I have recently heard from Dr. Tynes that the boy remains well.

TIC.

Of torticollis and other tics, the error of diagnosing a physical disturbance through failing to ascertain the psychological differentia is far too frequent.

Thus a woman was recently seen in New York State who had been subjected to resection of the spinal accessory nerve on the advice of the best-known New York neurologist, and after seeing also Dr. Semmelweis in Germany. What they had called spasmodic torticollis of six years' duration proved to be, when proper differentia were utilized, a tic of purely psychogenetic character. She is now being treated by the physician with whom I saw her, who, although chief professor of internal medicine in his university, had not had the opportunity of becoming conversant with the differentia of the tics, but who, now that he is acquainted with them, should be fully capable of conducting a by no means easy therapeutic procedure. This consists of two parts:

Firstly, in cases where psychogenesis has been discovered, it is necessary to redirect the patient's mind away from the perturbing recollection of the circumstances which lead to the tic.

The second part of the treatment, and the sole treatment where the psychogenesis is undiscoverable or where the tic is merely a habit which has originated in some physical discomfort, consists of re-educative discipline, by which control may be gained over the movements which constitute the tic.

In the case of the lady to whom reference has been made, the psychogenesis was discovered in a single interview. But the psychomotor discipline usually takes considerable time.

ILLUSTRATION OF PSYCHOGENESIS—CASE OF TORTICOLLIS AND GRAPHOSPASM.

Single woman, E. L., aged 31; expert counter in the United States Treasury.

Complaint—Cannot use right arm, for each motion causes the head to turn to the right, "and I am compelled to look right backwards with a most powerful force, over which I have no control." It began three months before with a pain behind the right shoulder, running around to the right side. She now has pain all the time. She consulted a physician, who called it neuritis and advised massage. The nurse who was called feared to massage her, so electricity (sic) was tried, and did good at first to both the pain and the movements.

She had fallen on this shoulder in August, but it did not trouble her after the first few days.

The movements and pain had been bearable until a month before she saw me, for she had left her work from time to time, on one occasion for three weeks.

Present State—Appetite good, no indigestion or pain, and the general physical examination showed nothing abnormal except loss of weight, atonia and exaggerated reflexes.

Psychic Examination—No marked defect of memory, attention, judgment in general matters, nor emotional reactions; but she is much worried about her condition, which she *believes to be a physical malady*. As will appear, there are other worries which she did not at first reveal.

Onset—She had no unusual worry at the time, she declares; but on account of straightened finances and the delicacy of her mother she has been anxious for some years. As a result of examination it was ascertained that three months before the tic there had occurred a serious unpleasantness with a comrade in the office, whom she stigmatized as an ignorant, conscienceless woman. The emotional bitterness displayed in the patient's account was an immediate index of the serious pathological significance of this episode. Her attempts at harmony caused no satisfaction, so she declares that she ceased worrying. "I had tried to adjust it, but failed; for she is a married woman older than and above me in the office. She is angered because I do not associate with her. But as she had spoken disparagingly of my mother, I taxed her, only to meet with denial."

She brooded deeply over this episode, and as her work in counting can be performed quite automatically, her thoughts were free all day long to dwell upon the constant unpleasantness of being in the same room as the other woman, who *sits behind her on the right*.

Some three years before she had renounced marriage for the sake of her mother, on account of a love affair which had turned out unfortunately. Her mother, too, had had an unfortunate marital experience, the knowledge of which has tended to strongly depress the patient's mind. But in spite of all this, she declares that her home is happy with her mother and sister, for whom she has a strong affection and admiration, and terms "a practical Christian." She has always been most anxious to do her duty and to make good at her work, but she confesses that since the quarrel with her fellow-worker her thoughts have been preoccupied by the unpleasantness it has caused, in which, however, she believes herself to have the sympathy of many of the other girls. But at work she cannot help thinking of the other woman.

Examination of the Origin of the Tic—Is evident that the girl's thoughts about her enemy cause her head unconsciously to veer and turn toward where she knows her to be. This is the less easy to resist because her attention is partly occupied by the counting of the money, which is her duty. As she is anxious to do this as rapidly and well as possible, mistakes or insufficient work not being condoned, she is the less able to resist the motor response to

her underlying thought, which is essentially a desire for an understanding with the other woman and a reconstitution of her own desire to be in harmony with her surroundings.

By now, however, by a process of psychological substitution, the need of turning the head has come to accompany *every* use of the right hand, so that she is unable to use her knife at the table without a turning of the head and an ensuing rigidity of the arm and head in the effort to arrest the torticollis and to accomplish the act she wishes. In writing it is the same thing, and the case affords an example of writer's cramp mechanically produced by torticollis of mental origin, which by a psychological association has, in turn, become producible by *any* use of the hand or arm.

The cause of pain is the action of the muscles antagonistic to the turning movement, which she consciously seeks to prevent. Between the automatic desire to turn the head and the conscious effort not to do so the muscles of the shoulder, neck and upper part of the chest are maintained more or less constantly in a state of powerful contraction, and the severe drag upon their attachments, combined with a state of fatigue, provokes the pain of which the patient complains.

Even at rest the patient now holds the head somewhat to the right, and keeps contracted the neck and shoulder muscles on that side. The attempt to turn the head straight or to the left is not accompanied by *angoisse*, strictly speaking, but causes a distress referable to the muscles at the right side and to the consciousness of her incapacity to freely perform the desired movement. She feels an actuating force stronger than herself. It is from such feelings in the credulous and superstitious that may arise the notion of possession by an external being, a *demon*. If the woman's tic is not cured, I have no doubt that in course of time anguish will accompany efforts to suppress the movements, but at present the syndrome is not complete.

There are somatic factors in the case, for the tic is always much worse during the catamenia, when she has much pain, nausea and sinking feelings of the heart with flushes, chills and headache, and often has to take to bed. These symptoms are said to be due to uterine malposition.

She has also a marked exophoria, and had to abandon on account of dizziness her original work of spreading bills.

But the psychological factor is the main one, as will appear, for the torticollis is proportional to the insistence of the thought of her painful relationship with her fellow-worker, and when she succeeds in dismissing this from her mind the tic rarely occurs. This, however, has been difficult, because she had no confidence, not being willing to trouble her tired sister as had been her habit, and a clergyman to whom she was much attached having left Washington; hence there was no relief from brooding over her grievance.

Treatment and Progress.—I explained the genesis of her affection and gave a good prognosis. My first prescription was to take

10 days of cheer in the country and to try to be less hyper-conscientious during that time, paying no attention to her troubles or to the torticollis. Six days later she returned, not having followed the prescription, with pain in the head and the tic worse than ever. I gave her exercises in psychomotor discipline, consisting of dealing a pack of cards into two heaps while her head was turned away from the affected side, and cutting along lines ruled on a piece of paper. In a few days she greatly improved in performing these tasks, the tic greatly diminished and the pain in the shoulder disappeared.

But the fact that this improvement became less rapid, as was to be expected, so discouraged her that she relaxed her efforts during the exercises and substituted therefor a constant tension of the muscles in an attempt to rectify the abnormal posture of her head and neck. This created pain at the angle of the scapula, where the latissimus dorsi is attached, and she lost courage. She was advised to go out and relax, and to abstain from work for at least another month. This she declared herself unable to do, and persisted in returning to work against advice. In consequence, the torticollis was greatly aggravated, and she gave up attending. I have learnt recently that she had to remain away from work for two months, during which she took cheiropactic treatment, which improved her torticollis, but not the professional cramp, and she does her work entirely with the left hand, and her bitter mental attitude is worse than before.

HYSTERICAL TIC.

In the case which follows no psychogenetic factor could be ascertained, but the cure of the tic was readily effected in a fortnight in spite of this. Further, the reintegrating of harmonious reactivity of the nervous system is more readily accomplished in the child than in the grown-up person.

The case is that of a Russian boy of eleven seen by the writer at the George Washington University Dispensary (Dr. Frankland's service) in December, 1908. He declared that ever since the age of five he has felt the need of periodically turning his head abruptly to the right every few minutes. He experienced no desire to do this, but as he never attempts to inhibit the movement, and performs it at least every few minutes, he gives himself no opportunity to develop *angoisse*. He presents no other neuropathic stigmata, having neither scruples, timidities, *aboulias* nor feelings of inadequacy, morbid fears, nor monomanias, although he occasionally day-dreams, but what boy of his age does not? The movements are short, yet not "electric," but they often occur in volleys. They are such as could be reproduced volitionally. They are painless, and disappear with sleep. However, no conditioning idea could be elicited, as he is entirely unaware how he began the movement, saying, "it just comes." The movements are more numerous when he is perturbed, and have never been influenced by any neutralizing subterfuges, none having been tried. They consist

of sudden turning of the chin over the right shoulder, sometimes accompanied by its elevation and that of the shoulder, and a twitching of the face, more especially the lips. So it is very evident that the spinal accessory nerve alone could not perform such a movement, and it is inconceivable that a local irritation could comprise the facial nerve, the spinal accessory and all the nerves of the cervical plexus without having some effect upon contiguous structures and implicating the phrenic nerve as well. It must, therefore, be cerebral. The question whether focal or psychic is answered by the test of voluntary inhibition of the movements, and I found that by maintaining his attention firmly to follow with his eyes the movements of my slowly-moving finger, fixing it intently and vividly, I was able to entirely suppress the movement, first for the space of 30 seconds, and later for periods of increasing duration. I then impressed upon him the power of his own will in suppressing the movements, and he was ordered to come to the dispensary every day for treatment, which consisted of the psychomotor discipline of fixing with his eyes slowly moving and stationary points for longer and longer periods under the supervision of Messrs. Page and Buckner, two of the students in the dispensary. He supplemented this by similar exercises at home, and at the end of 10 days the tic was under such control that he made the movement only twice daily. At the time of writing he is cured.

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Book Reviews.

PHARMACOLOGY AND THERAPEUTICS FOR STUDENTS AND PRACTITIONERS OF MEDICINE. By Horatio C. Wood, Jr., M.D., Professor of Pharmacology and Therapeutics in the University of Pennsylvania, etc. Second edition. Philadelphia and London: J. B. Lippincott Company. Price, \$4.

Delayed by the necessity of waiting for the new Pharmacopeia, this volume brings these important departments of therapeutic knowledge strictly up to date. The articles on veronal, digitalis, pituitary (body), atoxyl and salvarsan have been recast, and some 20 substances not in the previous edition have been noticed. Some remedies which he considers of little value the author has included out of respect for the Pharmacopeia, and some rejected by the latter authority he has retained.

While realizing the immense advance made in such textbooks by basing the therapeutic use of drugs as far as possible on their laboratory investigation, one is tempted to suggest that at some time in the distant future the bulk of the textbooks used by students and practitioners will be greatly reduced by the cutting out of confusing details which only concern the laboratory worker and enriched by the addition of clinical suggestions which may aid in the cure of the sick. Some of the textbooks of the past generation were pitifully lacking in science, but remarkably comforting to the doctor who did not know exactly what to do for his patient.

APPLIED IMMUNOLOGY. The practical application of sera and bacterins prophylactically, diagnostically and therapeutically, with an appendix on Serum Treatment of Hemorrhage, Organotherapy and Chemotherapy. By B. A. Thomas, A.M., M.D., Professor of Genitourinary Surgery in the Polyclinic Hospital and College for Graduates of Medicine, etc., and R. H. Ivy, M.D., D.D.S., Assistant Instructor in Surgery in the University of Pennsylvania, etc. With five colored inserts and 68 illustrations in text. Second edition, revised. Philadelphia and London: J. B. Lippincott Company. Price, \$4.

This is the newest branch of practical medicine, a department of enormous importance to the practitioner, and the touchstone of culture in every member of the medical profession. It has been a wilderness and a nightmare to most physicians who "got their education" as long as 10 years ago. Graduates of longer

standing "have a patient to see" when the subject is broached. Not only is immunology necessarily an abstruse thing, but its developers are continually bringing forth new discoveries, for the explanation of which intricate theories are propounded in impossible languages and with scientific terminology expressly coined for the purpose. Browning in his worst moments has nothing on the immunologist.

The authors confess that "the vast majority of standard works on immunity are often unintelligible to the practicing physician," who consequently turns for instruction to the less confusing treatises furnished by pharmaceutical firms. In the little work before us the effort has been to strip the subject of all confusing non-essentials, and to present the whole matter up to date in such a form that any intelligent physician can understand it and apply it in his practice. With a little concentration it is possible to gain a comprehension of the substances in the blood and tissues with which immunology has to deal, and of the classes of serums with which bacteria and their poisons are combated. The facts known concerning immunity, the processes by which it is produced, the most accepted explanations of this state and the technique involved are clearly set forth. A chapter of some 60 pages on practical application gives detailed directions for use of these agents in different diseases, so classified that the practitioner can find what he wants for his patient's case at once. A résumé of organotherapy follows, and the work closes with "Salversan up to Date."

CONSTIPATION, OBSTIPATION AND INTESTINAL STASIS. By Samuel Goodwin Gant, M.D., LL.D., Professor of Diseases of the Colon, Sigmoid Flexure, Rectum and Anus in the New York Post-Graduate Medical School and Hospital. Second edition, enlarged. Octavo of 584 pages, with 258 illustrations. Philadelphia and London: W. B. Saunders Company. Cloth, \$6 net. Half Morocco, \$7.50 net. 1916.

The new thing in this old realm of medicine and surgery is the more minute and accurate study of the structural and physiological phenomena of these important organs. The pendulum seems to be swinging a little away from the still recent surgical furor with which bolder and more dexterous surgeons specializing in abdominal work attacked these parts. It is a hard-hearted operator, indeed, who has not questioned the wisdom of his own decision in many a woman haunted by adhesion pains and haunted by them ultimately into invalidism, insanity or suicide. Men like Dr. Gant, who can see all sides of a subject and weigh impartially all considerations, are of the highest value to the community, especially when they have the courage and the patience to put their conclusions into book form within the reach of every practitioner.

The work before us is beautifully illustrated with cuts, which show clearly the points of importance in the text. A very thor-

ough groundwork in each section is laid in anatomy of the parts, and each subject is clearly discussed without haste and without confusion. The medical treatment is given as a practitioner wishes to have it given—with exact directions for the application of a great number of the best agents, medicinal and otherwise. There are even pages of formulas for pills that one may need. Surgery is considered in each case only as a final resource after the deliberate review of the other mechanical agents possibly of value, such as electrical, vibratory and massage treatment. Diets have, of course, a large place in the book. The surgical part is clearly presented in an up-to-date manner, as might be expected.

Seven new chapters add to the value of this second edition, dealing with a number of new subjects not yet familiar to practitioners. It is a fine work, based on broad and painstaking experience in both the medical and the surgical aspects of this difficult yet most vital group of organs.

THE MEDICAL CLINICS OF CHICAGO. March, 1916. Vol. I, No. 5. Published bi-monthly. Philadelphia and London: W. B. Saunders Company. Baltimore: The Medical Standard Book Co. Paper, \$8 per annum.

As time passes each succeeding issue of "The Medical Clinics of Chicago" attests more and more the wisdom of the originator. He certainly was in touch with the needs of the internist, and has supplied a quarterly absolutely qualified to meet the censure of the most critical. In this issue are short sketches of a practical nature on Roentgenologic aspects of intestinal stasis, congenital syphilis, acute nephritis following acute tonsillitis, anacarca and uremic convulsions with rapid recovery, cellulitis of chest-producing profound sepsis and delirium, hysteria in a strong man, tumor of the spinal cord, typhoid fever resembling pneumonia, Banti's disease, bronchiectasis with secondary cardiac decompensation, acromegaly of long standing without subjective symptoms, gangrene of lung, carcinoma of stomach simulating pernicious anemia, a case of mitral insufficiency and stenosis with embolus to the brain, primary sarcoma of the fibula with metases in brain and cervical glands, etc. Surely this is a galaxy of articles sufficiently diversified to tickle the palate of the most fastidious. Case reports of this character are of inestimable value in helping the physician out of difficult predicaments in both diagnosis and treatment.

HOW TO LIVE. Authorized by the Hygiene Reference Board of the Life Extension Institute. Irving Fisher, chairman, and Eugene Lyman Fisk, M.D., Director of Hygiene of the Institute. Eighth revised edition. New York and London: Funk & Wagnalls Company. Price, \$1 net. 1916.

The book is filled with valuable advice. There is need of further revision by a careful medical editor, as many of its statements are ill-guarded, and many given as positive are still matters of grave dispute.

MARYLAND MEDICAL JOURNAL

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BALTIMORE, MAY, 1917

THE DUTY OF THE MEDICAL PROFESSION IN THE PRESENT CRISIS.

WAR has been declared and we are on the threshold of serious affairs. The United States, as was Great Britain, is not prepared for war with a resourceful foe. It will take months, perhaps a year, before we shall have an adequate and well-equipped army for service wherever it may be required. The navy is better prepared and is likely to see service first. This branch of the service also needs to be greatly augmented in personnel and in vessels. Both branches are deficient in medical officers, even on a peace basis. Strenuous efforts are being made by the navy to secure surgeons, and at the request of the Navy Department the medical schools will graduate certain of their seniors at once in order that they may enter the service. Physicians are also solicited to enter the service, either as regular officers or as reserve officers. The need of the navy is urgent and immediate; surgeons must be obtained. As a patriotic duty members of the medical profession, of suitable age and training, should respond to this call at once. The army will need 12,000 surgeons for every 1,000,000 troops, and they will mostly have to come from civil life. Many medical men are now being commissioned in the officers' reserve corps for service when needed, and many more will have to be secured. Young men are desired but, of course, some, or perhaps many, middle-aged ones will have to serve. This, of course, will take off many who are engaged in practice and to whom the loss of income will be a great misfortune. It will be necessary and desirable, therefore, for those physicians who, for one or another reason, remain at home to aid their brethren who respond to the call of duty. It will be one contribution to the general good that the

physicians in civil life can make. In elaboration of this idea we publish the following communication from the State Committee for National Defense:

PUNISHING PATRIOTISM—A SUGGESTED METHOD OF MEETING THIS
EVIL.

UNDOUBTEDLY in the past civilian doctors who have been patriotic, and who have served their country in the army or navy, have been in a measure punished for such service by finding their practice dissipated and gone on their return home. The knowledge of this has naturally acted in preventing many a physician entering the Officers' Reserve Corps of U. S. at this time.

To meet this situation the Maryland State Committee on Medical Preparedness has devised the following plan to be presented at the annual meeting of the State Society (Medical and Chirurgical Faculty), to be held in April.

This plan has already been endorsed by the Baltimore City Medical Society.

The committee proposed to have offered the following resolutions:

(1.) "*Resolved*, That the Medical and Chirurgical Faculty of Maryland recognizes the patriotism of those members of the medical profession resident in Maryland who volunteer for the service of the United States Government, and in appreciation of this we recommend that should these members of the profession be called into active service, the doctors who attend their patients should turn over one-third of the fees collected from such patients to the physician in active service or to his family."

(2.) "*Resolved*, That the secretary of the society shall have prepared letter blanks according to the form attached, to a number sufficient to supply those physicians who are called into active service with a sufficient number, so that they can send a filled-out form-letter to each patient, a carbon copy going to the doctor who has agreed to look after the physician's practice, and a second carbon copy to be sent to the secretary of the State Society."

The secretary of the State Society is instructed to file the carbon copies received by him, and on notification by a physician that he has terminated his service with the Government and has resumed his practice, the secretary of the State Society shall then

send out to each of the patients of this physician whose names and addresses he has received in the filed letters a letter stating that the physician has resumed the practice of medicine, and requesting the patient in the name of the society to recognize the physician's patriotism by summoning him should he be in need of medical attention.

This method is the only one which we have been able to devise which can in any way meet the situation that confronts the doctor who is patriotic, and who is penalized for his patriotism by the loss of his practice. By this method the profession at large is "put upon its honor," the patients of the physician are urged to retain his services, and this urging is done, not in the doctor's name, but in the name of the profession and as a patriotic duty.

We also propose, should these resolutions be adopted, to send a description of the plan to every member of the profession in Maryland, a copy of the form letter, and also two cards, one to be signed by the physician endorsing personally the first resolution, and the other an application for admission to the Medical Officers' Reserve Corps.

PROPOSED FORM LETTER.

(Regular Letterhead of Medical and Chirurgical Faculty.)

M.....

Street.....

Post-Office.....

Dear M.....:

As a member of the Reserve Corps of the United States ^{Army,} I have been ordered into active service by the Government, and on ^{Navy,} that account I am writing to you of this fact, so that, in case of illness, you may summon some other doctor to attend you. In my absence Dr..... of....., Telephone No....., has kindly consented to attend my patients, and I can heartily recommend him.

Sincerely,

.....

Resolution adopted by Medical and Chirurgical Faculty of Maryland:

"Resolved, That the Medical and Chirurgical Faculty of Maryland recognizes the patriotism of those members of the medical profession resident in Maryland who volunteer for the service of the United States Government, and in appreciation of this we recommend that should these members of the profession be called into active service, the doctors who shall attend their patients should turn over one-third of the fees collected from such patients to the physician in active service or to his family."

Please present this letter to any doctor whom you may call in to attend you.

Medical Items.

THERE was a meeting of the Book and Journal Club of the Medical and Chirurgical Faculty of Maryland on March 27. Dr. Wm. A. White of Washington, D. C., discussed "Reil's Rhapsodian."

DR. WILLIAM RUSH DUNTON, JR., of the Sheppard and Enoch Pratt Hospital, has recently returned from Clifton Springs, N. Y., where he assisted in the incorporation of the National Society for the Promotion of Occupational Therapy, which has as its object the consolidation of workers among the blind, crippled, nervous, physically and mentally weak, who use work in varying degrees as a means in recovery of these cases.

Two public-health lectures were held on April 3, and 10. On Tuesday, April 3 addresses were delivered by Dr. Lewellys F. Barker and Dr. Eugene Lyman Fisk.

ARRANGEMENTS have about been completed at the Marine Hospital to put it in readiness for the treatment of officers and men of the navy who may be injured in action.

MEMBERS of the medical and dental profession filled Osler Hall March 30, when they assembled to discuss war service. Dr. T. S. Cullen, president of the Baltimore Medical Society, presided, and introduced Dr. Welch, whose subject was "The Medical Profession and Preparedness." He gave an account of his visit to England and France, where he visited various hospitals and laboratories. Maj. Robert Noble, M. C., U. S. Army, spoke of the doctors that the government needs and how it will use them. Speeches were also made by Lieutenant Wilson and by Dr. Gordon Wilson.

DR. THOMAS HORTON, Curtis Bay, who has been seriously ill with rheumatism for five weeks, is able to attend to his office practice. It is expected that within a few days he will be able to leave the house.

THE Board of Estimates of Baltimore received a letter March 20 from Assistant Surgeon-General A. H. Glennan, U. S. P. H. S., Washington, D. C., stating that the govern-

ment will be ready to take over the Baltimore Quarantine about July 1. The government agrees to pay the city \$176,775 for the station and its equipment, including buildings, land and boats.

DR. CHARLES W. RAUSCHENBACH of the University of Maryland has received his commission as lieutenant, Medical Corps, U. S. Army, and will report for duty in the near future.

At a meeting of business men of Baltimore at the Merchants' Club March 30, the statement was made by the chairman of the committee that the sum of \$30,000, the amount required for a base hospital was in sight. Of this sum \$21,000 has already been subscribed.

Dr. Winford S. Smith, superintendent of Johns Hopkins Hospital, who represented the Baltimore surgeons and physicians willing to do their bit, was authorized to proceed with the organization and equipment of a base hospital.

This hospital will be taken over and maintained by the War Department in case of hostilities.

THE Medical Department of the University of Maryland contributed to the campaign of the navy for recruits by graduating eight young physicians, and allowing them to go directly into the United States Navy Reserves force instead of making them wait until June.

The eight men are: George Otto Hartman of Ohio, Francis Carl Herzog and M. J. Montgomery of Pennsylvania, Kenneth D. Legge and Herbert L. Shinn of Washington, R. S. G. Welsh, George L. McClintock and George L. White of Maryland.

Welsh was pronounced by Medical Director Stitt of the United States Navy, the most splendid specimen of physical development he had examined.

THE American Pediatric Society will hold its Twenty-ninth Annual Meeting at The Greenbrier, White Sulphur Springs, W. Va., on May 28, 29 and 30.

MAJ. J. HARRY ULLRICH, commander of Field Hospital No. 1, N. G., has been named as president of a board of medical examiners for the Maryland Naval Militia by Secretary Daniels. This board will be a permanent organization, and is a part of the preparedness

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program which is being worked out by the Federal Government. The other members of the board are Passed Assistant Surgeon Flynn, and Acting Assistant Surgeon William G. Townsend, U. S. Navy.

SIX Baltimore physicians have been appointed lieutenants in the Officers' Reserve Corps, and have accepted the appointments: Dr. Henry N. Shaw, Dr. Montrose T. Burrows, Dr. John A. C. Colston, Dr. Nowdigate M. Owensby, Dr. Maurice C. Pincoffs and Dr. Frederick M. V. Beitler.

THE annual meeting of Alienists and Neurologists under the auspices of the Chicago Medical Society will be held July 10, 11 and 12 at the Hotel La Salle, Chicago.

THE forty-third chapter, Alpha Upsilon, of the Alpha Kappa Kappa Medical Fraternity, was instituted at the medical department of Johns Hopkins University with appropriate ceremonies, preceded by a banquet at the Emerson.

Dr. George Cook, grand primarius, and Dr. Albert B. Lordrum, grand secretary-treasurer, represented the Grand Council of the fraternity. The officers for this year were installed and regular fraternity affairs were conducted at the chapter-house.

Alpha Kappa Kappa is one of the largest medical fraternities of the country and numbers among its members such eminent physicians as Dr. Charles Mayo of Rochester, Minn., Dr. David Starr Jordan, president emeritus of Leland Stanford University, Dr. J. Chalmers Dacosta of Jefferson Medical College, and Dr. C. K. Mills of the University of Pennsylvania.

A WOMEN students' restroom, dedicated to the late Miss Mary Elizabeth Garrett, is being constructed just off the corridor of the main hospital building at the Johns Hopkins Hospital.

The women medical students, the women alumnae and the women physicians planned and financed the project. The building will contain 37 lockers and two dressing alcoves.

A REPORT read at the meeting of the Northeastern Dispensary, 1224 East Monument street, showed that in the year ended December 31 the institution had treated several thousand patients, filled 19,433 prescriptions and per-

formed 724 operations. Visits to the dispensary totaled 15,165, and 7403 new patients were treated. The physicians visited 725 patients in their homes. The officers are: Dr. Arthur Wegefarrh, president; Clinton O. Richardson, vice-president; Dr. J. Fuller Frames, treasurer and Dr. Arthur McConachie, secretary.

DR. I. M. RUBINOW of Columbia University representing the American Medical Association, spoke on "Health Insurance" at McCoy Hall on Saturday, February 17.

At the annual meeting of the Hebrew Hospital, the Jewish Home for Consumptives and the Hebrew Educational Alliance, Baltimore plans were considered for a new structure to cost \$200,000.

DEATHS.

MAHLON R. PRITCHARD, M. D., Westfield Pa.; College of Physicians and Surgeons, Baltimore, 1880; aged 64; a Fellow of the American Medical Association and formerly president of the Tioga County (Pa.) Medical Society; a specialist of the eye, ear and throat died at his home, February 23.

WILLIAM WAUGH McCLEARY, M. D., Bellevue, Pa.; College of Physicians and Surgeons, Baltimore, 1884; aged 56; a member of the Medical Society of the State of Pennsylvania; a surgeon to the Suburban General Hospital, Bellevue; died in the Presbyterian Hospital, Pittsburg, March 5.

JOHN T. MCCARTHY, M. D., Baltimore; Baltimore Medical College 1893; aged 53; a member of the Board of Police Surgeons of Baltimore from 1901 to 1905; died at his home, March 7.

WILLIAM DIETRICH, M. D., West Hoboken, N. J.; Baltimore University 1905; died at his home about February 20.

LOUIS JOSEPH WIRTZ, M. D., West Hoboken, N. J.; Baltimore University 1904; aged 35; died recently at his home.

GORDON T. SIMONSON, M. D., Crisfield, Md.; University of Maryland, Baltimore, 1896; aged 44; a member of the Medical and Chirurgical Faculty of Maryland; who fractured his leg at the ankle about a month before; died at his home, March 10, from heart disease

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APPENDICITIS COMPLICATING PREGNANCY.

By Aimé Paul Heineck, M.D.,

Chicago.

Professor of Surgery, Chicago College of Medicine and Surgery.

APPENDICITIS attacks all ages and both sexes. Though distinctly a surgical disease, it is also of great practical interest to gynecologists, obstetricians and general practitioners.

The frequency of appendicitis in the female pregnant or non-pregnant is underestimated, and its significance not fully appreciated. It is often overlooked, misdiagnosed and therefore improperly treated. The autopsy findings often bring the first intimation of the true cause of the clinical picture.

To serve our fellow-practitioners we collected, analyzed and studied the original reports of all the operated cases of appendicitis occurring during pregnancy, that are to be found in the French, English and German medical literature from 1900 to 1915, inclusive, and also some unpublished personal cases. Cases reported with insufficient data were not considered.

The subject will be discussed under the following subheads:

1. Incidence.
2. Etiology.
3. Combined Appendicitis and Extra-Uterine Pregnancy.
4. Pathology.
5. Coexisting Conditions.
Influence of Pregnancy Upon Appendicitis.
Influence of Appendicitis Upon Pregnancy.
6. Diagnosis.
7. Differential Diagnosis.
(a) Maternal.
(b) Fetal.
8. Prognosis.
9. Treatment.
(a) Prophylaxis.
(b) Indication for operation.
(c) Operative.
10. Post-Operative Sequelae.
11. Summary.

Incidence.—During the child-bearing age, woman is at no time exempt from attacks of appendicitis. In 46 of our selected cases the age is not stated. The remaining patients were at time of operation:

Under 18 years, 3 cases.
18-20 years, inclusive, 13 cases.
21-25 years, inclusive, 33 cases.
26-30 years, inclusive, 42 cases.
31-35 years, inclusive, 23 cases.
36-40 years, inclusive, 12 cases.
One patient 42 years.

The condition occurs in primiparae and multiparae; in first early and late pregnancies; in single and twin pregnancies. Appendicitis can coexist with other disease processes to which it may be primary, secondary or coincidental.

In the cases forming the basis of this article there are noted 30 primiparae, 20 deutiparae, 37 multiparae.

The number of previous pregnancies, if there were any, is not stated in 83 cases. Appendicitis occurs at all periods of gestation. In some cases the disease antedated pregnancy; some cases were operated early with reference to onset of symptoms; some late. It is recorded that operation was indicated and performed:

During the first three months of gestation, 40 times.
From 4 to 6 months, inclusive, 60 times.
From 7 to 9 months, inclusive, 28 times.
Period of gestation not stated, 45 times.

Etiology.—The etiology of appendicitis in a pregnant woman is the etiology of appendicitis in the non-pregnant woman. It is the belief of many clinicians that gestation does not exert any influence, good or bad, upon the normal appendix.

Appendicitis is primary or secondary; it may be secondary to disease of the uterine adnexa, just as inflammatory diseases of the tube and ovary may be secondary to an appendicitis. Recurrent attacks of appendicitis may be precipitated by pregnancy, labor or puerperium. Pregnancy can provoke acute inflammatory disturbances in an appendix bound down by dense adhesions or containing a foreign body, one or more fecal concretions, or worms. The appendicitis complicating pregnancy may be the patient's first attack. It may have been preceded by one, two, three or more attacks of greater or less severity.

Combined Appendicitis and Extra-Uterine Pregnancy.—In some of the reported cases in which appendicitis and ectopic pregnancy were associated it was not determined which of the two conditions antedated the other; which was primary and which was secondary.

When an appendicitis precedes a tubal pregnancy in which it

apparently plays an etiological rôle, the anatomical changes frequently evolve as follows :

1. Appendicitis.
2. Peri-appendicitis.
3. Peri-adnexitis.
4. Formation of inflammatory adhesions interfering with tube mobility and tube function and producing tubal malformation.
5. Tubal pregnancy.

All these conditions favor the ectopic implantation of fertilized ova. Appendicitis may hasten tubal abortion through local infection, through general intoxication, may lead to suppuration of hematoceles of fetal cysts.

To differentiate appendicitis from extra-uterine pregnancy is at times difficult. In the unruptured state, the pregnant tube gives symptoms analogous to those of chronic appendicitis. An infected hematocele presents the signs of suppurative pelvic peritonitis. Peritoneal hemorrhage due to a ruptured tubal gestation sac has symptoms closely resembling a diffuse septic peritonitis. Positive Abderhalden test, absence of fever, vaginal hemorrhage, symptoms of internal hemorrhage will point to tubal pregnancy. It is interesting to make an exact diagnosis, but as both diseases are surgical affections exposing mother and fetus to serious dangers, the watchword in both conditions should be early operation. Appendicitis calls for prompt operative treatment; extra-uterine pregnancy is an emergency condition calling for immediate ablation of the ectopic fetal sac.

In all the cases of appendicitis and extra-uterine pregnancy herein considered, 12 in number, operation gave excellent results. The findings differed in nature, and consequently the operative procedures varied in extent in the different cases.

Pathology.—Acute and chronic inflammations of the appendix involve the organ, in part or in its entirety, and are associated with catarrhal, fibrinous, sero-fibrinous, sero-purulent or purulent exudates present in the cavity of the appendix, in its wall or around it. The inflammatory process may be limited to the mucous membrane, may involve part of or the entire thickness of the appendical wall.

The appendix vermiformis may be partly or wholly intra or extra-peritoneal. A retro-peritoneal or extra-peritoneal appendix the seat of suppurative inflammation gives rise to retro-peritoneal or extra-peritoneal pus collections. Adhesive inflammation may lead to permanent fixation of the appendix, to one or more abdominal viscera normal or pathologic, to the abdominal parietes, or to both. Inflammatory adhesions involving the tube may angulate it, constrict it; may interfere with tubal mobility and tubal function; may change its course and play a fairly important rôle in the etiology of sterility. The appendix, during a 280-day pregnancy, may touch every organ of the abdomen. Pus in quantities,

large or small, may be present within the cavity of the appendix, in its wall or around it. Acute suppurative inflammation of the uterus and tubes may be set up by direct extension from an acutely inflamed appendix. The walls of appendiceal or peri-appendiceal abscesses are formed in part by one or more of the following organs: uterus, adnexa, omentum, intestine, small or large, etc. An appendicular abscess may bulge into the posterior cul-de-sac, may open spontaneously into the uterus, vagina, rectum.

The inflammation proceeded to the state of gangrene in 24 cases; in 11 of these cases one or more perforations were present. The gangrene may be limited to the mucous membrane, may affect the entire appendiceal wall or the entire organ. Any part of the organ, tip, middle, base, may be gangrenous. Fecal concretions, one or more, were present in 13 appendices. It is easy to understand how inflammation migrates from the appendix to the Fallopian tube, to the pregnant uterus, etc. Pelvic inflammatory processes extending by continuity or contiguity of tissue occurs in the pregnant as well as the non-pregnant. Distal pus collections are due to metastases by way of the lymph or blood channels. In the ulcerative type of inflammation the ulcer extends in depth and in surface area; when all the coats of the appendix have been burrowed through, a perforation results. The apex, the base, or any other part of the appendix may be the seat of perforation.

Coexisting Pathological Conditions.—Coexisting pathological conditions are primary or secondary to the appendiceal inflammation or merely coincidental, bearing no relation of cause or effect to it. It is not uncommon for appendicitis in the female to be complicated by or associated with tubal and ovarian diseases: salpingitis, pyosalpinx, hydrosalpinx, ovarian abscess, tube-ovarian abscess, parametritis, etc. Close anatomical association of the appendix with the uterus and the adnexa explains the frequent simultaneous involvement of these organs in disease processes.

Influence of Pregnancy Upon Appendicitis.—Upon a normal appendix, gestation has little or no influence. Upon an appendix, the seat of previous or latent disease, pregnancy exerts an unfavorable influence. It can intensify an existing inflammation. It may cause a previous inflammation to recur. In view of this possibility, many of our best clinicians recommend and practice the removal of the appendix in women married or about to be married who have had one or more attacks of appendicitis non-operatively treated.

The pregnant uterus as it ascends in the abdomen commonly displaces the cecum and the appendix from below up, from right to left and from behind forward. In enlarging, the uterus may stretch existing inflammatory adhesions; it may displace, twist and kink the appendix, and thereby whip into activity latent appendicular infections. Pregnancy is a serious complication of appendicitis. 1. When the appendix is adherent to the uterus. 2. When it is the seat of an inflammation, perforative, gangrenous or suppurative in type. 3. When its inflammation leads to abscess-for-

mation, near or distal. 4. When the uterus forms part of the wall of an appendicular, peri or para-appendicular abscess. In the afore-mentioned conditions, adhesions may be torn, abscesses may be ruptured by the enlarging uterus.

Influence of Appendicitis on Pregnancy.—Appendicitis is a menace to the mother's life; it is a menace to the gestation. The danger increases with the advance of gestation, and is most marked after the fourth month. Infection can and does spread from the appendix to the genital organs by way (1) of the peritoneum (localized or diffuse peritonitis); (2) of the appendiculo-ovarian ligament; (3) of adhesions existing between the uterus and a perityphilitic pus focus; (4) of the Fallopian tube.

Even a mild case of appendicitis may lead to a plastic peritonitis closing permanently the lumina of both tubes. From inflammatory adhesions may result dysmenorrhea, subinvolution, sterility through inflammatory closure of tubal ostia, habitual abortion, extra-uterine pregnancy, a tendency to uncontrollable vomiting, etc.

Appendicitis in the pregnant state may or may not terminate pregnancy. The prognosis is good as to non-interruption of pregnancy. 1. When the appendix does not hang in the small pelvis. 2. When the inflammation is limited to the appendiceal mucosa. 3. When it does not extend beyond the appendiceal wall. 4. When the appendiceal abscess or peri-appendiceal abscess is small.

Premature termination of gestation either by fetal death, fetal expulsion, or both, may be caused by: 1. Sequels of previous appendicitis, acute or chronic; inflammatory adhesions, old or recent, preventing uterine expansion. 2. Infection from the appendix extending through the tubes to the uterus and its contents. 3. Infection reaching the placenta through lymphatic and vascular channels. 4. Metastatic inflammation of the placenta disturbing its circulation. 5. Local irritation. 6. Fatal effect of hyperpyrexia upon ovum.

The further pregnancy is advanced the greater the danger of abortion after operation. The chance of abortion after early operation is very small indeed, for the operation is then done before an extensive inflammation has involved the uterus or an abscess rendered the patient septic. Tendency to abortion is small in clean cases, as in this type the operative manipulation is reduced to a minimum.

In 173 cases of appendicitis herein studied it is stated that abortion was artificially induced nine times and occurred spontaneously forty-nine times. Caesarian section was performed four times; abdominal, one; vaginal, three.

In 83 cases pregnancy was not interrupted by the operation. In 17 cases no definite statement is made.

Diagnosis.—Appendicitis is not as frequently misdiagnosed as formerly. Increased familiarity with the condition enables us to make an earlier and a more timely diagnosis. It is an established fact that the morbidity and mortality of this disease can be lessened if it be diagnosed and operated before the advent of compli-

cations, perforation, gangrene, abscess formation, peritoneal involvement, etc. The diagnostic difficulties increase with the advance of gestation and persist during the puerperium.

The symptomatology of appendicitis in the pregnant is the symptomatology of the disease in the non-pregnant. Nevertheless, the recognition of the condition is made more difficult by various factors. One or more of the cardinal symptoms may be lacking. The symptoms and signs may not be sufficiently pronounced to lead to careful investigation or may be classed among the various disturbances incident to pregnancy.

During pregnancy the abdominal walls are on the stretch; they lack the softness and pliability so essential to careful and satisfactory abdominal palpation. In very fleshy patients, palpation does not give definite findings.

The seat of pain, though always corresponding to the site of the inflamed appendix, may be abnormally high. The leukocyte count gives uncertain findings; at best, it has only relative or corroborative value.

Mistakes are less likely to occur by keeping in mind (a) that every pregnant woman is to be examined for physical defects. (b) That the history is all-important; ask about previous attacks. (c) In gravid women, all attacks of indigestion associated with vomiting and fever should arouse suspicion and command a careful examination of the abdomen. (d) Right iliac pain unassociated with uterine contractions should lead one to think of appendicitis. (e) Deep-seated retro-coecal and other abscesses may be detected by rectal examination. (f) Peri or para-typhlitic abscesses may be detected by vaginal examination.

In a pregnant woman acute abdominal pain of a sudden onset, at first diffuse and then remaining localized to the right iliac fossa suggests appendicitis; more so if the patient gives the history of previous attacks.

Differential Diagnosis.—During gestation many conditions simulate appendicitis. As most of these conditions demand operative relief, the resulting diagnostic mistakes are embarrassing and humiliating to the surgeon, but not commonly disastrous to the patient. In adnexal disease the pain and the objective findings are most always bilateral, while in appendicitis they are unilateral, and the pain, as a rule, is more acute. Non-ruptured right tubal pregnancy simulates and is frequently diagnosed chronic appendicitis. Rigidity and tenderness over McBurney's point are seldom marked in extra-uterine pregnancy. Intelligent interpretation of the clinical history and of the objective findings, furnished by a careful and thorough abdominal, rectal and vaginal examination helps one to arrive at a correct diagnosis. Abscesses in the pouch of Douglas due to perforative appendicitis have been wrongly attributed to primary uterine and tubal infection; right-sided parametritis, due to the spreading of a retro-colic appendicitis, has been diagnosed ordinary puerperal infection.

In pyelitis, uteritis, ureteric calculus of the right side, one is

guided by the urinary symptoms and findings. Hepatic colic has a sudden onset, with pain in the right upper abdominal quadrant; this pain radiates toward the right shoulder, and is usually apyretic. The pain of nephritic colic descends and radiates toward the external genitalia. In fecal impaction, the symptoms are less severe and yield to colonic injections and to laxatives.

In advanced pregnancy, the differential diagnosis between appendicitis and cholecystitis may prove difficult, owing to the associated upward displacement of the coecum and appendix by the pregnant uterus.

Prognosis.—Pregnancy increases the severity and the fatality of appendicitis. Death may be due to intestinal obstruction, to perforation of the appendix, to heart failure, to peritonitis, or to sepsis. Recovery takes place through the gradual subsidence of symptoms; through the spontaneous rupture of an appendicular abscess externally, or into the gut, vagina, urinary bladder, uterus, or other hollow viscus.

The type and the acuity of the inflammation influence the prognosis. The prognosis is good if the changes in the appendix are slight; if the inflammation is limited to the appendiceal wall; if there be slight or no peritoneal involvement; if complications be absent. It is grave in gangrenous, perforative and suppurative appendicitis and in all cases complicated by abscess formation near or distal, or by diffuse peritonitis. The results for the mother and fetus are better, the less advanced the gestation, the less virulent and widespread the inflammation, the earlier the operation. Maternal mortality of appendicitis in pregnancy increases from the fourth month on.

As far as the child is concerned, prognosis is absolutely good in cases of early operated appendicitis. Severe maternal appendicitis is exceptionally grave for the fetus, who succumbs either through infection or through interruption of pregnancy. In our cases there were 58 abortions; of these, 9 were induced and 49 were spontaneous. The spontaneous abortions gave 17 maternal deaths and 32 recoveries. The induced abortion gave 4 maternal deaths and 5 recoveries.

Prophylaxis.—The cause of appendicitis is not known. Therefore, in the present state of our knowledge a discussion of the prophylaxis of appendicitis of necessity must be and is incomplete, inadequate and inconclusive. The importance of constipation as an etiological factor in appendicitis is as yet undetermined. We do not know how to prevent appendicitis, but we do know how to lessen its morbidity and mortality. Some surgeons remove the appendix during the course of all laparotomies. The removal of a healthy organ because one is not certain that it will always remain free of disease is unnecessary, meddlesome, and contrary to the teachings of conservative surgery.

In all laparotomies for conditions other than appendicitis, if the patient's condition permits, the appendix should be examined and removed: 1. If it be abnormal in length, size or location. 2. If

it be in close relation to a pedicle or denuded surface, left by operation. 3. If its cavity be partly or wholly obliterated. 4. If it be the seat of anatomic alterations, club-shaped, thickened, kinked, twisted, strictured, etc. 5. If it contain foreign bodies, fecal concretions, worms, etc. 6. If it be adherent, in part or in its entirety, to some normal or diseased contiguous organ or to the abdominal parietes. 7. If it be the sole content or one of the contents of a hernial sac. 8. If it be the seat of cystic, neoplastic or inflammatory disease.

Operations that contribute to the safety of a pregnant woman should be performed without hesitation.

Indications for Operation.—Clinical cures obtained by medicinal measures are rarely anatomical cures. Starvation treatment is debilitating to the mother, is unfavorable to fetal growth. Perforation, abscess, general peritonitis, subdiaphragmatic abscess, thrombosis and embolism are possible results of expectant treatment. Better to remove too many appendices than too few. Be not deterred by the possibility of a difficult operation, for the results of early operation are satisfactory and the mortality low.

Operate early in the attack and early in the course of pregnancy. As a general proposition, operation does not interrupt pregnancy. The triumphs of ovariectomy and hysterectomy in pregnancy are well known; in appendicitis operation is even more urgent. Accumulated instances are on record in which pregnant uteri have been operated upon, cauterized, etc., in which ovarian and other pelvic tumors have been removed without pregnancy being terminated. The high mortality of appendicitis in pregnant women is due to fatal temporization. Placental, uterine and peritoneal infections are such serious complications that one should, if possible, operate before the inflammatory process has extended beyond the appendical wall, before abscess formation has taken place, before the onset of peritoneal or other complications.

Operate early in gestation. At that period the uterus is not large enough to be in the way. The operation is less difficult; the tendency to the interruption of pregnancy is minimal and the percentage of maternal recoveries is higher. The danger of recurrence in the latter months of gestation calls for operation during the attack; if that be not feasible, an interval operation should be performed as long before the labor as possible.

Operation in 50 cases of non-perforative appendicitis gave only one maternal death and seven abortions. In 55 cases of diffuse peritonitis secondary to appendicitis there were 44 maternal deaths; only one child was saved; all the others were born prematurely or died soon after birth from weakness, or the illness of the mother resulted fatally before the termination of labor.

Treatment.—Interruption of pregnancy is not indicated; it increases the danger. Rest should be enjoined. During the operation the uterus should be handled and exposed as little as possible. After the operation opiates should be administered. In a clean case, the operative manipulation is slight. Artificial evacuation of

the uterus before laparotomy is indicated only when the child is dead or when there are appreciable signs of labor. If the uterus be artificially emptied before the seventh month, the child will be definitely lost and the patient not improved. By evacuating an appendiceal abscess before emptying the uterus one avoids flooding the free peritoneal cavity with pus. Operations for appendicitis are performed under local or general anesthetics. Some operators resort to lumbar anesthesia. Operate as rapidly as is consistent with thoroughness and the patient's welfare.

The operation of election is appendectomy, the technique of which is little influenced by the presence of pregnancy. The same surgical principles are applicable in the pregnant as in the non-pregnant.

When in doubt as to whether the case is one of appendicitis, salpingitis, tubal pregnancy or other pathological conditions, use a supra-pubic median incision. This incision affords easy access to most of the pelvic contents, and though it is not the incision of election for exposure of the appendix, it is a very serviceable incision. In cases of combined appendicitis and salpingitis, combined appendicitis and tubal pregnancy, combined uterine myoma and appendicitis, etc., the median infraumbilical incision should be employed.

In 125 of our cases the appendix was removed. In 43 cases it is not stated whether it was removed or not. In 5 cases it was sought, but not found, and therefore not removed. Each of these cases presented an abscess, which was evacuated and drained. If the appendix be imbedded in a mass of firm inflammatory adhesions, it can be removed by shelling it out of its peritoneal coat.

An appendiceal abscess should be opened at its point of maximal bulging, preferably through a cutaneous surface. If the appendix be not easily found, be content with incising the abscess, evacuating its contents and resorting to tube or gauze drainage. A subsequent operation will rarely be required to remove the appendix. Appendiceal abscesses have been opened and drained through the vagina. Appendiceal abscesses have also been opened through the rectum. These are exceptional procedures; methods of necessity, not of election.

The post-operative treatment is that which is employed in the non-gravid, modified only by a longer sojourn in bed, thereby giving time for firm consolidation of the operative wound.

Post-Operative Complications and Sequelae.—In cases of such widely different nature as those herein studied, operated in different surroundings and by different operators, one is not surprised to find noted the occurrence of post-operative complications and post-operative sequelae. The danger of hernia development after timely operations for appendicitis is practically nil. The protection of the operative scar by the aid of adhesive plaster has been recommended. See that labor be not unduly prolonged.

Among the sequelae reported in these cases were four ventral

hernias, three cases of diffuse peritonitis, thrombosis of femoral veins, phlebitis, subphrenic abscess, intestinal fistula, etc.

SUMMARY.

1. Appendicitis occurs at all ages and in both sexes. It presents to all medical men important diagnostic, prognostic and therapeutic features.

2. Appendicitis, acute or chronic, initial, relapsing or recurrent, primary or secondary, complicates pregnancy with greater frequency than is believed. It is the most important complication of pregnancy.

3. It occurs in single and twin gestations; in first, early and late pregnancies; in primiparae, deutiparae and multiparae.

4. It occurs at all periods of the child-bearing age, and at all periods of gestation. It complicates both intra and extra-uterine pregnancies, and can coexist with other disease processes to which it may be primary, secondary or coincidental.

5. Gestation exerts no untoward influence upon the normal appendix. It can and frequently does aggravate existing or determine new inflammatory disturbances in appendices deviating from the normal in form, length, mobility, location, etc., in appendices bound down by adhesions or the seat of inflammatory or other degenerative changes. Pregnancy does not relieve the dangers of appendicitis, but aggravates them.

6. Appendicitis and uni or bilateral tubal pregnancy are frequently mistaken for each other. They may occur simultaneously or consecutively, may be either primary or secondary to or independent of each other.

7. In appendicitis, in ectopic pregnancy and in combined appendicitis and ectopic pregnancy, of obscure symptomatology, it matters not whether you are certain or in doubt as to the real diagnosis, early and timely operative treatment is imperatively indicated.

8. During gestation, every type of appendicitis may occur—adhesive, catarrhal, gangrenous, ulcerative, obliterative, perforative and suppurative.

9. Appendicitis with adhesion formation is of great significance, because adhesions of inflammatory origin can (a) incarcerate the pregnant uterus in the pelvis and mechanically hinder the enlargement of the uterus, (b) impair the contractibility of the uterus, (c) interfere with uterine labor contractions, (d) entail subinvolution, (e) induce sterility, (f) disturb tubal and ovarian integrity of function and of structure, (g) determine ileus, (h) produce abortion, and (i) lead to extra-uterine pregnancy.

10. Chief among the coexisting pathological conditions noted in appendicitis are simultaneous or consecutive inflammation of the uterus, tubes or other pelvic organs. The close anatomical relations existing between the appendix and the pelvic organs explain their frequent association in disease processes.

11. Appendicitis has a greater morbidity and a higher mortality

in the pregnant than in the non-pregnant, operated or non-operated. It may terminate pregnancy.

12. The symptomatology of appendicitis in the pregnant is the same as in the non-pregnant. The clinical picture, however, is blurred by the coexisting symptoms of pregnancy. Diagnostic mistakes may be lessened by keeping in mind that appendicitis occurs in pregnant women; that a history of previous attacks during the same or previous pregnancies can frequently be elicited by thorough and deliberate physical examination. With care, one can in these cases almost always arrive at a correct diagnosis.

13. To establish with certainty the diagnosis of appendicitis during pregnancy, it is necessary to exclude the presence of myalgia due to stretching of abdominal muscles, typhoid fever, ruptured or non-ruptured tubal pregnancy, cholecystitis, salpingitis, ovaritis, adnexitis, ovarian cyst with or without a twisted pedicle, right-sided pyelitis and ureteritis, fecal impaction, hepatic and nephritic colic. At times any of the forementioned conditions so closely resemble appendicitis as to cause diagnostic errors and operative mistakes.

14. The morbidity and mortality of appendicitis complicating pregnancy and the puerperium are the morbidity and mortality of delay in applying efficient surgical treatment. The initial symptoms of the attack do not enable the clinician to foretell accurately how a given case will terminate. What is going to happen in 10, 20 or 40 hours following the onset of appendicitis cannot be foreseen. When the condition is diagnosed and remedied early, the mortality is practically nil. Abscess formation may be forestalled by early diagnosis and early operation. The high mortality is due to late diagnosis and late operation. The pregnant woman whose metabolism is good is a good subject for operative measures.

15. Prognosis is better for the mother if there be no interruption of pregnancy spontaneous and otherwise. The bad attacks cause abortions, and abortion aggravates the illness. In the great majority of surgically-treated cases there is no interruption of pregnancy, and when it does occur, it is not due directly to the operation. The interruption of pregnancy is not indicated. It aggravates the prognosis. The fetal prognosis is good in early operated cases.

16. The following prophylactic measures are sound and safe, and are recommended for general adoption: (a) During the child-bearing age, recurrent attacks of pelvic pain, dysmenorrhea, menstrual and other pelvic disturbances unassociated with objective pelvic findings are not infrequently due to unrecognized appendicitis or sequelae thereof. In the presence of this etiological factor, the ablation of the appendix is indicated. (b) In laparotomies for conditions other than appendicitis, the appendix should be examined. Should it present any deviation from the normal, its removal is indicated. (c) During the child-bearing age, any woman who has had one or more attacks of appendicitis treated non-operatively should have her appendix removed so as to correct

existing pathological conditions and prevent future attacks of appendicitis and complications incident thereto. True prophylaxis in a woman of child-bearing age who has had one or more well-marked attacks of appendicitis is an interval operation. It goes without saying that constipation is to be avoided and that other hygienic precautions are to be observed.

17. A definite and accurate diagnosis of acute, chronic or recurrent appendicitis, irrespective of the stage of pregnancy, invariably calls for operation. The disease during pregnancy runs such a rapid destructive course that delay is hazardous. Operation should be early and immediate. A case may be rendered hopeless by hesitation and inaction. Temporizing methods are extremely dangerous.

18. Treat appendicitis in the pregnant female as you treat it in the non-pregnant. Every pregnant woman who is a subject of appendicitis should be operated on just as soon as the diagnosis is made, whether the attack is the first, second or third.

The unusual risks of leaving a diseased appendix in the abdominal cavity are much increased by the pregnant state and the evil consequences of another attack, *i. e.*, gangrene or perforation will be correspondingly greater. The danger of recurrence in the later months of pregnancy and in the child-bed period calls for operation preferably during the attack. If the patient is not seen in time, one will do the next best thing, an interval operation during the pregnancy. Pregnancy is an additional indication for operation in cases of appendicitis.

19. In inflammatory disease of the appendix, the ideal operation is an appendectomy. In some cases, however, one has to be content with incision, evacuation and drainage of an appendiceal abscess. Exceptionally drainage of abscesses in Douglas' pouch may be effected through the vagina or rectum. Pus should be evacuated, irrespective of uterine contents and irrespective of its location.

20. It is well to keep in mind that for an appendectomy the median incision is contraindicated in the later months of pregnancy; that it is best to avoid or to reduce to a minimum the manipulations of the uterus; opiates are indicated in the after-treatment. Labor, when it occurs shortly after a laparotomy, is not to be unduly prolonged; it may have to be assisted.

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The leading article is on treatment of chronic ulcer of the stomach and duodenum. There follow two clinics on poliomyelitis. Others are on primary pernicious anemia, eczema (from primroses, etc.), Addison's syndrome, gangrene of lung, lavage for pyelitis, endocarditis, gout and stomach spasm.

SOME PHASES OF THE DIAGNOSTIC AND THERAPEUTIC USES OF TUBERCULIN IN UVEITIS, ILLUSTRATED IN FOUR CASES.*

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BEFORE the advent of tuberculin as a diagnostic agent, tubercular uveitis, or choroiditis, as I deal with it in this paper, gave us much less concern that it does now. The description in Fuchs, copied substantially in the fourth from his other editions, is brief, and presents:

(a) Disseminated or miliary tuberculosis of the choroid with these characteristics: "Small, ill-defined patches of yellowish or pale-reddish color are seen in the fundus. These, even within a short period of examination—within a few days—grow larger without, however, attaining a size of more than one-third of the optic disc, and at the same time new patches may make their appearance in the fundus. By this rapidity of growth the affection is distinguished from chorioditic spots, which change very slowly; besides, the pigment changes, so frequent in choroiditis, are wanting in tubercles of the choroid." The nodules thus described are typical of tubercular nodules found elsewhere, and when they occur have essentially a diagnostic interest. The subsequent statement is made that "in chronic tuberculosis of the lungs, intestine, etc., it is not ordinarily observed."

(b) Solitary or conglobated tubercule is essentially a "great number of smaller miliary nodules which have coalesced to form one pretty large tumor."

The brief description terminates with the statement that "it is probable, too, that not a few cases of disseminated choroiditis, especially in young persons, are a kind of attenuated tuberculosis of the choroid, although a sure proof of this has not yet been produced." The views herein expressed were accepted for years.

The intimation that tuberculosis may lie at the bottom of disseminated choroiditis, although there is no proof of it, assumes importance because of the possibility of diagnosis by tuberculin.

In this last edition Fuchs describes the use of tuberculin for diagnosis in a way now commonly understood. He condemns the Calmett method and dwells chiefly upon the subcutaneous test with rise of temperature, etc. Speaking of local reaction in the suspected eye, he says it "may consist either in increased injection or in fresh exudation; it occurs but seldom, and is unwelcome, too, since *it means an aggravation of the eye disease.*" Continuing, he suggests a diagnostic dose as 0.5 to 1 mg. of old tuberculin. If no reaction occurs after 48 hours, a larger injection

*Read before the Academy of Ophthalmology and Oto-Laryngology, Memphis, Tenn., December, 1916, and Ophthalmological Section, Baltimore City Medical Society, February 21, 1917.

tion may be given, "but never over 5 mg." The therapeutic application consists of much smaller doses, the increase to be stopped if febrile reaction occurs. It is unnecessary to quote other authorities or current journals, save to mention that numerous writers have reported observations similar to those contained in this paper. In case-descriptions I use the term "focal" in the sense usually accepted in this country—as a reaction occurring *in* the eye, in contradistinction to "local," which means reaction at the site of tuberculin injection.

I want to present the essential features of four carefully-studied cases of disseminated choroiditis, thought to be of tubercular origin, three of which were treated with tuberculin. These cases present three phases of this form of therapy:

(1) The possibility of permanently damaging vision by a focal reaction.

(2) Advisability of omitting a focal reaction and relying for diagnosis upon a positive Von Pirquet or other diagnostic measures for tuberculosis after elimination of other causes.

(3) Conditions indicating the use or avoidance of tuberculin.

Case I—Permanent Damage to Vision Following the Diagnostic Use of Tuberculin.—Mrs. S., 31 years of age, mother of three children, consulted me on August 2, 1912. The right eye was destroyed two years previously by central choroido-retinitis. Vision in the left eye had been poor for 10 days. Her previous history was negative, save convulsions before the birth of her second child. She had been subjected to repeated systemic examinations. No serological tests had been made.

Examination showed: R. E.: Central and paracentral scotoma, foveal choroido-retinal atrophy with numerous spots of disseminated atrophy throughout the fundus. L. E.: Central vision, 20/40, form and color fields normal. On the lower periphery there were numerous pigmented atrophies with minute grayish-yellow deposits, certainly of recent date, near the temporal disc margin.

She was sent to the hospital for clinical study. Nothing abnormal was found except a high sp. gr. in the urine (1030), with indican in excess. A Wasserman on the blood serum was reported negative. Temperature, taken every two hours for two days, showed no variation. Then on August 4 Dr. H. D. McCarty gave 0.5 mg. of tuberculin for diagnostic purposes. There was no temperature reaction; the sole observable result was focal. Five days after the use of tuberculin she complained of diminished vision in the left eye. It was 20/100. The vitreous was more cloudy, and between the fovea and disc there was a new choroidal exudate. The patient went home after another week unimproved. While there she took mercury under the direction of her physician. She returned to Baltimore after three months with vision the same as when she left (20/100), a paracentral color scotoma,

contracted form field and an atrophic spot near the fovea. A second blood serum (Wasserman) made by another serologist was reported "feebly positive." In view of the fact that Mrs. S. had taken mercury during the three months spent at home, he believed that the diagnosis of lues should be accepted.

The points I want to emphasize are:

(1) Presence in each eye of atrophic areas, while the better eye showed, in addition, such signs of acute disease as fresh exudates and cloudy vitreous.

(2) The speedy occurrence of new trouble in the acutely-affected eye after injection of tuberculin, with permanent lessening of vision; no reaction in the lost eye.

(3) Meaning of positive reaction in the second Wasserman test. In view of the first negative Wasserman, the feebleness of the second and the decided tubercular reaction, I am inclined to think the diagnosis of syphilis not proved.

This is a matter of some importance, in view of a suggestion by Theobald Smith.¹ In a paper from which I quote later he speaks of living organisms, when introduced into a body infected with another virus, becoming pathogenic. True, living organisms are not used in human beings, but the effect of various preparations of dead organisms is the same, only to a less degree. It is certainly conceivable that a vaccine which would react only slightly in a body not otherwise infected might cause greater damage because of previous infection.

Case II—Rapid Extension of Choroidal Exudate Following Diagnostic Use of Tuberculin.—Miss A. R., 19 years of age, Jewess, public school teacher, consulted me December 31, 1915, for floating spots and blurred vision in the right eye of a fortnight's duration. Both eyes were myopic to nearly five diopters. With correcting glass, right eye had 20/30, central vision; left 20/20. A fine descemetitis could be made out in the right eye. After mydriasis there was found slightly cloudy vitreous with a large choroidal exudate in the lower nasal field.

Examinations, including sinuses, teeth, blood serum, Wasserman reaction, etc., showed nothing save a slight enlargement of the right lobe of the thyroid. The patient was sent to the hospital and put to bed. The temperature, taken every two hours for two days, showed no fluctuations. Then, on the advice of Dr. H. D. McCarty, who thought that such a dose could do no harm, I consented to a subcutaneous injection of .001 mg. tuberculin for diagnostic purposes.

Three days later temperature reached 100°, and there was circumcorneal congestion; also, along the border of the choroidal deposit originally observed, except at its lower and outer margin, there was a deepening of the red color of the fundus. This was

¹Journal A. M. A., Vol. LX, No. 21, p. 1591, Theobald Smith, "An Attempt to Interpret Present-Day Uses of Vaccines."

displaced in two days by a new grayish-yellow exudate. Vision fell to 20/40 (—). This focal reaction subsided after two weeks, when the patient was given a .00001 mg. O.T. as a therapeutic measure. During the four months following, Miss R. received 12 injections of tuberculin, the strength gradually increasing to .01 mg. She usually showed circumcorneal reddening, but no other reaction. Her central vision became normal in six weeks, and has remained so ever since. A small incut found in the temporo-superior field in the beginning gradually cleared. She has had no treatment since June, 1916, and has remained perfectly well.

I have cited this case to show the possibility of a severe focal reaction from a reasonably small dose of tuberculin. Her rapid improvement may or may not have been due to this vaccine. I do not believe we can say positively, for the case was acute, and Nature might have done the same thing without our help, or interference, as the case may be.

Case III—One Eye Lost from Uveitis, the Other Apparently Saved by Tuberculin.—T. B. (colored), age 22, waiter, was first seen April 11, 1913. Married; has one healthy child; had lived in a house with two sisters who had died of tuberculosis. In the summer of 1912 his left eye was lost from uveitis. The globe was shrunken, sclera thinned, tension minus; pupil occluded and the lens opaque. He claimed light perception. So far as I could determine, mercurial treatment had been administered during the attack in the left eye.

R. E. showed steamy cornea, descemetitis, posterior synechiae with vitreous too turbid to admit of fundus examination. Vision was moving hand at two or three feet. He was sent to the Presbyterian Hospital, and Dr. Gordon Wilson kindly examined him for me. Clinical examination and Wasserman reaction on the blood serum were negative. From April 19 to 21 temperature remained normal or below; pulse 90. A Von Pirquet was ordered, and the resident physician was entrusted to make it. Probably he overdid it; at any rate, in 48 hours there was violent arm reaction; temperature rose to 101.6; the eye became more injected and painful. I am inclined to think there was an accidental subcutaneous test. We decided to limit treatment to atropia and dionin until temperature reaction should cease and the inflammatory lesion should become non-progressive. It was nearly a month—May 17—before this was accomplished. The patient was then admitted to the Municipal Tuberculosis Hospital in Dr. Wilson's service. There was no vision except the moving hand. There were present deep circumcorneal injection, adherent pupil and muddy vitreous. He remained in the Municipal Hospital until September 16 (four months), with the exception of one week in July. He received altogether 22 injections of tuberculin, all after the first two being bullion filtrate. The dates of admin-

istration, the size of the doses and such notes as were made at the hospital are appended:

Case 3—Record of injections and doses, with dates:

May 28, 1913—1/10,000 T. R. (T. rose from 96 to $98\frac{2}{3}$); no entry of focal reaction.

June 3—1/100,000 B. F.; no note of reaction, local or otherwise.

“ 7—1/10,000 B. F.

“ 11—1/100,000 B. F.

“ 15—1/5000 B. F. Elevation of T. from 97 to $99\frac{1}{5}$. For one week (until 22d) had oscillating T. Generally subnormal, not exceeding 99. From 6 A. M. on

“ 23 22d to 12 noon on 23d, T. 97 to $99\frac{1}{5}$.

“ 23—1/510,000 B. F. T. 98.

“ 28—1/5000 B. F.

July 2—1/5000 B. F.

“ 5—1/5000. T. elevated 1° .

“ 9—1/3350. Slight oscillation of T., all below normal.

Home—July 16 to 24.

July 26—1/3300. Low variation in T. continued, from 96 to $98\frac{3}{5}$.

August 8—1/2500.

“ 12—1/2500.

“ 15—1/2000; from then to 20th highest T. $98\frac{1}{5}$; lowest, 95 (on two occasions).

“ 20—1/2000.

“ 23—1/2000.

“ 27—1/1888.

“ 30—1/1888.

September 2—1/1500.

“ 10—1/1500.

“ 12—1/1200.

“ 14—1/1000 B. F.

“ 16—Dismissed. T. usually from 95 to 98; $99\frac{1}{5}$ only on two occasions, and followed injection of 1/3300 B. F.

Evidently Dr. Wilson's purpose was to gradually increase to a point just short of febrile or focal reaction. The man received no other general treatment, while locally atropia and dionin were continued.

He was discharged from the Municipal Hospital September 16, 1913, with normal central vision. He has been at work since, and came to my office, at my request, on April 3 of this year. The lost (left) eye is unchanged. In the right there are a few adhesions along the lower pupillary border. An area of choroidal atrophy is seen in the upper and temporal fundus, with numerous small pigment deposits elsewhere, especially around the fovea. He had 20/20 vision, and seemed in good health.

I call special attention to the avoidance of tuberculin so long as the case was in an advancing stage.

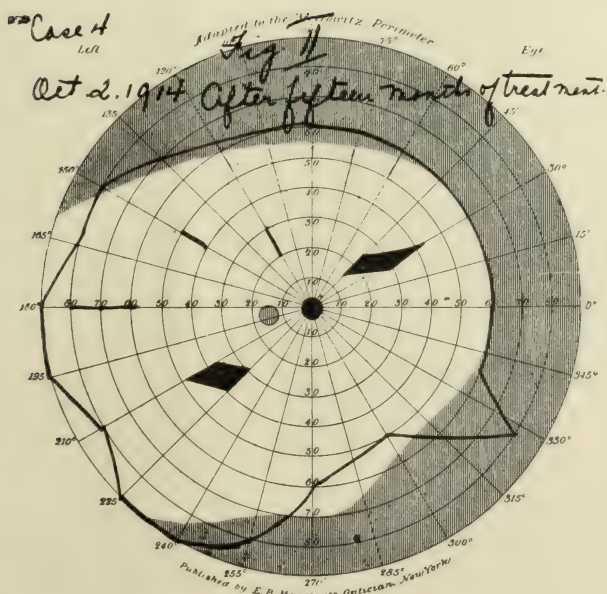
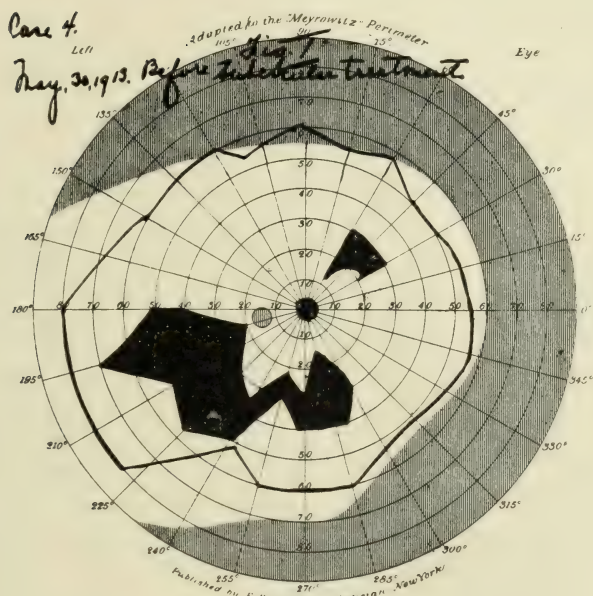
Case IV—Chronic Disseminated Choroiditis, with Repeated Circumcorneal Injection and Scotomata, the Former Apparently Controlled, the Latter Diminished by Tuberculin.—Mrs. W. B. R., 45 years of age, consulted me first in July, 1908. The right eye had been useless for a year or more from disseminated choroiditis, with central atrophy. Vision was, right, 20/200 (?); left, 20/20. If there was any trouble in the left eye at that time, my notes do not indicate it. Mrs. R. presented the appearance of perfect health. She lived in the country, and outside of what she termed "chronic rheumatism" had never been ill. The one significant thing in her family history was that four brothers had died of tuberculosis. She had been examined repeatedly and nothing found. At that time (1908) I only corrected herpresbyopia.

I did not see Mrs. R. again for five years—May, 1913. She then came on account of recurrent redness in either eye. There was episcleral and circumcorneal injection in her left eye. This (the good eye) showed numerous patches of disseminated choroiditis, chiefly in the upper end inner fundus. Fig. 1 shows her left field at this time (note the large scotomata). Central vision was 20/20, in spite of a fine descemetitis. She was being treated by her physician with salicylate of sodium, on the theory that rheumatism was causing the eye congestion. This treatment was continued for five weeks, or to July 2, without appreciable change.

During June she had repeated injections about the cornea of one or both eyes, with vitreous clouding. Vision varied from normal to 20/40. Field unchanged.

I then asked Dr. Wilson to see her with me, on account of the tubercular family history. After a thorough clinical examination, which was negative, we decided to use the Von Pirquet test, recognizing, however, its small value in adults. Both of us had always been timid about producing intraocular reaction. This dread, at first theoretical, was confirmed by cases I and III. The Von Pirquet test was made by Dr. Wilson himself, and was positive. It was then decided to make no attempt to obtain focal reaction, and to put Mrs. R. on therapeutic doses of tuberculin. She was accordingly given tuberculin, B. F. (human), 1/1000 mg.; normal salt solution, with one-half of 1 per cent. Phenol. 10 c.c. Label, give 2/10 c.c. of solution once a week. Thus she was to get 2/100,000 mg. once a week from her family physician until further orders. This dosage was continued without febrile reaction for six months (December, 1913), when Dr. Wilson advised addition of 1/100,000 mg. to the weekly dose (2/100,000) until this should reach 8/100,000 (1/12,500). This was accomplished by the end of January, 1914.

On February 2, 1914, there was the first evidence of improvement—diminuation in size of the scotomata. A weekly injection of 8/100,000 mg. of tuberculin was continued until May 10, 1914 (10 months from the time of starting), when it was stopped be-



cause of freedom from trouble for the preceding three months. After two weeks (May 28) circumcorneal injection reappeared in the right eye. Early in June tuberculin was renewed, with the initial dose of 2/100,000 mg. every 10 days, and increased as before. The chart, Fig. 2, of October 2, 1914, shows an enormous improvement in the scotomata. On December 17 this was maintained. Central vision was 20/15. Tuberculin was then discontinued. On March 13, 1915 (three months), small scotomata reappeared. There had been occasional circumcorneal injection of either eye. Tuberculin was given as before, with gradual increase to 8/100,000 mg., starting April 1. She reported to me toward the last of May with a history of no further discomfort. Tuberculin was stopped. She was not seen again until October 23, 1915 (practically five months without treatment). History was negative and field normal, except for blurring of the 5 m.m. white disc at a few points (Fig. 3). In February, 1916, this same condition persisted (seven months without treatment, with no symptoms). However, on May 26, 1916 (practically one year after discontinuance of treatment), the circumcorneal injection returned, and a small scotomata appeared in the lower and outer quadrant (Fig. 4). On May 26 tuberculin was renewed, continued for a month, and stopped without orders from us. I saw her on July 21, when she urged us to go back to the tuberculin, saying she felt better when taking it. Her physician was instructed to continue it in moderate doses (1/100,000) once a week during the summer. However, he went away from home, and Mrs. R. received no tuberculin from July until her next visit to me, October 20, 1916, when it was renewed. Her eyes were again congested, and the scotomata were enlarged (Fig. 5).

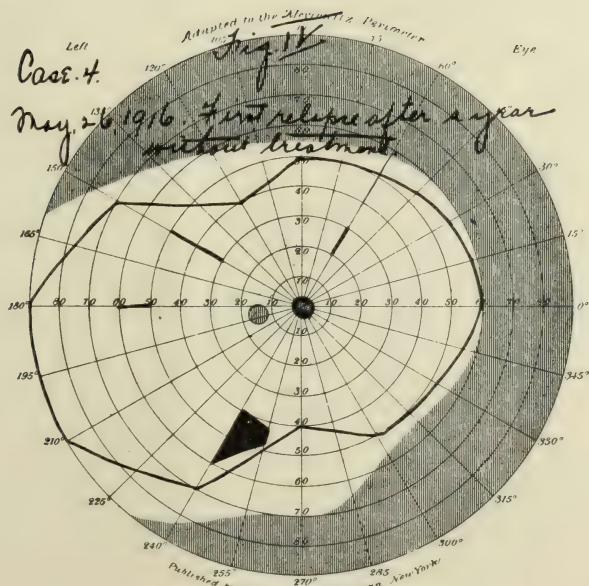
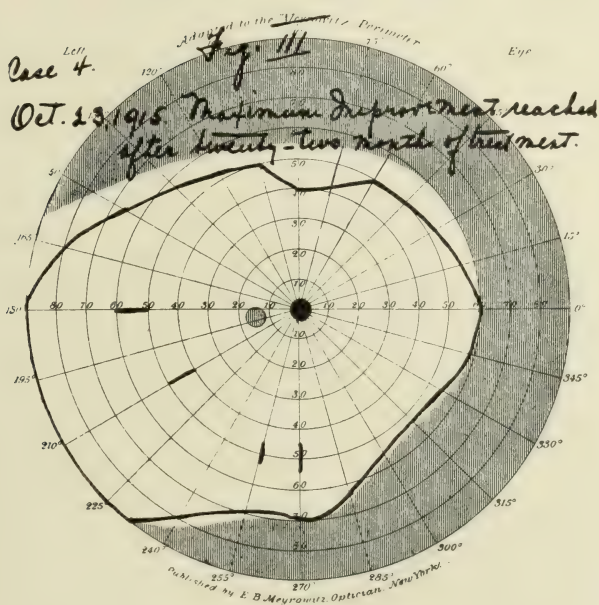
She reported again on November 23, 1916. She had had 2/100,000 mg. of tuberculin on November 3, 11 and 18. She complained of some headache, but the scotomata were definitely smaller (Fig. 6). Recent clinical examination by Dr. Wilson was negative, save for a blood pressure of 200, an increase of 50 in the last three years, suggesting, possibly, further vascular changes. Urinalysis at the time was negative for albumin and sugar, though an examination of a 24-hour specimen was impossible. Dr. Wilson advised the continuation of a 1/100,000 mg. of tuberculin without increase for two months unless reaction should occur.

Points to be noted:

(1) Tuberculin treatment of eight months' duration before improvement; relapses during 22 months whenever injections were discontinued, then a year without symptoms, and in consequence without treatment.

(2) Reduction in size of scotomata, the evidence of improvement.

I have grouped these four cases because they present useful points in the diagnosis and treatment of uveitis. What is the average attitude of the oculist to the study of underlying causes

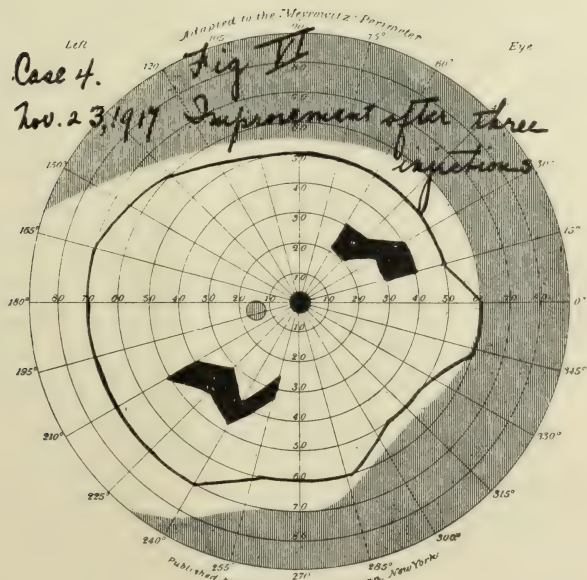
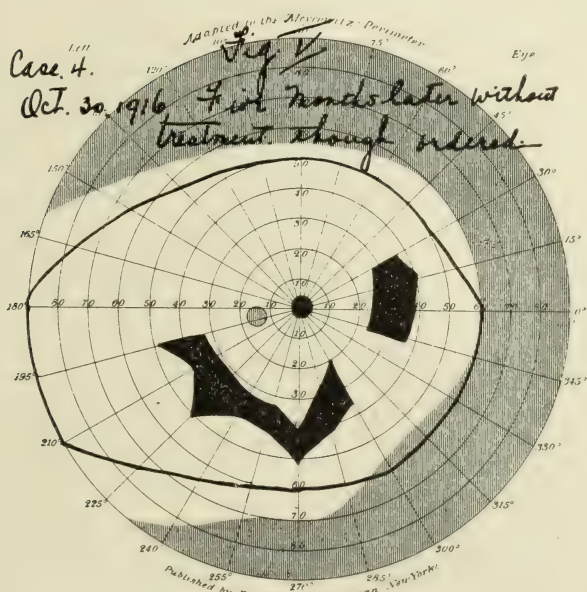


in this disease? The first things he thinks of are syphilis and tuberculosis. Doubtless there are some who still cling to rheumatism, but most of us have learned that in acute articular rheumatism we practically never see uveitis, and that what we call chronic rheumatism may be one of a great many things, the exact diagnosis often being impossible. After a Wasserman test, if negative, investigation for tuberculosis naturally follows. Here we are confronted with a practical difficulty. Ocular tuberculosis, especially of the uveal type, is a local lesion. Nothing positive is found by clinical examination, and we are thrown back on vaccines for diagnosis. Nothing short of a focal reaction is certain. Is a focal reaction safe? And how much tuberculin should be given?

As regards safety, in my first case the focal reaction promptly and permanently lessened vision, and in the second might have done the same had it occurred nearer the fovea. The doses in these two cases were 1/2 mg. and 1/1000 mg.—a wide difference. Basing my judgment upon the teaching of these cases and observations of men who are more familiar with tuberculin reaction than we can possibly be, I have come to the conclusion that the dose which will produce a focal reaction is absolutely unknown in any individual case until tried, and that if we determine to push tuberculin until such a focal reaction is obtained, we are deliberately assuming a risk.

Again, do we need a focal reaction? In a given case there may be a history of tubercular exposure, local ocular lesion without other symptoms, an absence of other causes, and finally a negative or positive Von Pirquet. Where do we stand? It is generally conceded that two or three negative Von Pirquet tests justify exclusion of tubercular diagnosis: a positive reaction indicates nothing more than an infection at some time in the previous life, and maybe a healed or limited lesion. But is not this all we need? Are we not safer in beginning, then, with minute therapeutic doses with gradual increase until we find the patient's point of tolerance than by insisting upon a diagnostic focal reaction in the beginning? In cases three and four this course produced splendid therapeutic results. If it be argued that we are not sure of the diagnosis and the course is tedious, I would say that, even so, it is better than damaging vision by diagnostic zeal. Of the two cases benefited by tuberculin, one has remained well, while the other shows tendency to relapse when without the vaccine. It seems that tuberculin, short of curing, can supply an increased resistance; that the patient misses it, and it may be our duty to supply it by small doses for an indefinite period.

Theobald Smith says: "* * * all parasites * * induce in the body of the host a degree of antagonism higher than that existing before the invasion. This antagonism may not be sufficient to eliminate the parasites; it may not even be strong enough to check the march of invasion and the progressive disease resulting therefrom; it may even, in some of its stages, be



injurious to the host * * * In a body already infected with some other virus living vaccines may co-operate with this virus and become pathogenic for that individual. * * * Localized bacterial infections are processes toward which the human body in general possesses a high degree of natural resistance. * * * It is impossible to separate the toxic from the immunizing product." Finally, he says: "In conclusion, let me briefly summarize the points to be emphasized. All parasites tend to increase the resistance of the host in which they live and multiply. Out of this universal fact a number of practical problems arise. In any given disease is it worth while to try to raise the immunity, and how much energy will it cost the patient? If worth while, what is the best and most sparing way of raising such immunity artificially? In any localized infection we must ask, Is this a beginning process without an attendant immunity, or is it a residual process with developed immunity? If the latter, vaccines may be considered safe. In processes associated with fever and bacteriemia science says hands off until we know whether we have a progressive disease with gradual undermining of the resistance or a more localized affection in which the excursions into the blood are secondary. In any case, the use of vaccines in these cases must be regarded as experimental, and should not be undertaken save in conjunction with one trained in immunologic problems."

What, as ophthalmologists, can we learn from this?

(1) That infection induces in the host its own antagonists, but not always enough to check the processes, and that this antagonism may be in itself injurious. An obvious deduction is that we, as eye clinicians, ought to know if this latter state exists before we induce more antagonism.

(2) The human body possesses "a high degree of natural resistance" to "*localized* bacterial infections." Uveitis is a localized lesion; consequently, Dr. Smith's concluding question comes home with great force. In a given case, are we dealing with a beginning process without immunity, or is it a residual process with general immunity? In the former case Nature is manufacturing antagonists. If we try to help, we may add just enough to push the patient over the damage line, for we cannot separate "toxic from the immunizing products." If it be a "residual process"—that is, if there be present none of the symptoms which we call "acute," but a condition which lags and relapses and will not get well, we can infer that Nature has reached her limit. Dr. Smith shows us how the internist should go at the problem. He should watch for fever and other evidences of bacteriemia. He should give Nature all the show she wants, or she may rebel. But local eye lesions do not produce enough systemic disturbance to give this information. We are forced to reason on local conditions. To us advance of the process in a short time, descemetitis, intense congestion, turbid, vitreous, etc., are guides. While these are advancing the process is not "residual."

The following conclusions seem to present the proper attitude

of ophthalmologists to the use of tuberculin for diagnostic or therapeutic purposes: First, avoidance of focal reaction in intra-ocular lesions; secondly, avoidance of tuberculin as a therapeutic measure in acute cases. Under "acute" there should be included duration and advance of the lesion as indicated by condition of the vitreous, descemetitis, etc.; third, tuberculin is indicated when the trouble is non-progressive, but does not get well; fourth, a positive Von Pirquet, with elimination of other causes, is sufficient basis for the use of tuberculin in therapeutic doses; fifth, the present status of vaccine therapy is so uncertain, in the opinion of even those most expert and experienced, that ophthalmologists owe it to their patients to conduct this treatment under the guidance of one trained in "immunologic problems."

A MANUAL OF NERVOUS DISEASES. By Irving J. Spear, M.D., Professor of Neurology at the University of Maryland, Baltimore. With 172 Illustrations. Philadelphia and London: W. B. Saunders Company. 1916. Price \$2.75.

In this attractive textbook of about 700 pages, dedicated to Professor Randolph Winslow, the author proceeds on a conviction that the delusion possessing general practitioners and students as to the special difficulty of this department of medicine is due largely to imperfect comprehension of the anatomy and physiology of the nervous system, to wrong methods of examining these patients, and to the lack of a moderately brief treatise which considers only the practical side of the anatomy and physiology of the nervous system. The method of examination laid down in this volume requires no special apparatus except a galvanic and faradic battery, demands very little training and is easily remembered. Accepted facts have always preference to lengthy discussions and theories.

The author has succeeded in giving us a very readable book which will indeed relieve those who study it of many of the confusions and bewilderments of mind which paralyzed the efforts of old-time graduates. Nervous diseases, in their ultimate analysis, are among the most complicated phenomena ever presented to human thought, and as described in the peculiar language of certain great specialists, are about as understandable as the fourth dimension to the ordinary reader, yet when grouped and described in ordinary English as groups they can easily be grasped. The treatment, which in olden times consisted of the administration of iodide of potassium, is now somewhat farther developed, but is still very limited. Sheltered by the author's discrimination from passing fads, the practitioner or student may in this volume learn really to feel at home with nervous diseases and to face with assurance any ordinary case that arises in his practice.

MARYLAND MEDICAL JOURNAL

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BALTIMORE, JUNE, 1917

THE FORTIETH ANNIVERSARY OF THIS JOURNAL.

IN May, 1877, the first number of the MARYLAND MEDICAL JOURNAL was published, under the editorship of Dr. Thomas A. Ashby and Dr. H. E. T. Manning. At that time there was a great need of a local journal, and this venture was accorded a warm welcome. The special aim of the journal was to gather up and report the clinical work of the several hospitals, which otherwise would be lost to the profession. In the first issue were original articles by several prominent medical teachers, all of whom have long since fallen asleep. The first paper, on "Abuses of Nitrate of Silver in the Treatment of Eye Diseases," was by Dr. Julian J. Chisolm, who closes with the following statement: "An aphorism for the treatment of eye inflammations and for the use of general practitioners may be readily formulated, for eye inflammations use caustic very seldom; use atropia very often." We suspect this advice holds good now as well as then. The second article was by Dr. Oscar J. Caskery, on "A Case of Diffuse Melanotic Sarcoma of the Brain, Following the Same Disease in the Orbit," in which a post-mortem examination was made and a report of the microscopic appearances of the tumors by Dr. N. G. Keirle, who still lives at a very advanced age.

Dr. Abram B. Arnold contributed a paper on "The Diagnosis of the Early Stage of Bright's Disease," and Dr. Thomas R. Brown, father of the present Dr. Thomas R. Brown, one on "Urethral Stricture." In the whole volume there are but two original contributions by authors who are living at this time, one by Dr. Samuel W. Seldner, entitled "A Case of Progressive Bul-

bar Paralysis," and one by Dr. Charles F. Bevan, on "Purpura Hemorrhagica."

In reviewing this volume one is struck by several facts; first, that most of those who contributed to its pages have passed away. These were men of great local and national prominence, whose professional services were in much demand, but whose names are now seldom mentioned, and, indeed, are unknown to a newer generation. And, secondly, the great changes that have taken place in medicine and surgery in the past 40 years. The germ theory has changed completely our conception of diseases, and the successive discovery of the pathogenic organisms has enabled us both to prevent and cure many conditions that baffled our best efforts at that time. The practice of surgery has been created anew, practically within the memory of the writer. Forty years ago the appendix was a supposedly harmless organ that required no surgical attention, pus tubes were not recognized, uterine fibroids were not disturbed, gall-stones were not removed, the stomach and intestines were but seldom attacked and the kidneys and spleen were considered to be outside the domain of surgery. The thorax was not explored, the brain was a surgical *terra incognita*, the prostate gland was not removed and the blood vessels not sutured. The veriest tyro operates now on conditions that the most experienced surgeon of that time would have considered beyond the pale of intervention. This JOURNAL has had a larger continuous existence than any other medical publication in Maryland. It has had a number of different editors, most of whom have died, and the present editor, Dr. Nathan Winslow, has been in active service with the troops since last July. It has been difficult, therefore, to conduct the paper during the absence of the editor, but we have done the best we could. It has now entered on the forty-first year of its publication in a time of great stress. The clouds are dark, but let us hope they may soon show their silver lining.

MEDICAL SOCIETY RECIPROCITY.

ON the evening of May 16 the Baltimore City Medical Society and the Baltimore County Medical Society returned the visit of the District of Columbia Medical Society by going to Washington as the guests of the District society. The occasion was a very

tions. Also, that different circumstances in life cause animals to act in different ways, and that these different kinds of actions cause different kinds of acquirements. These acquirements are the things he said were inherited. To avoid misunderstanding, Lamarck said that the effects of the action of the environment should not be confused with the effects of the action of the animal itself, and that the effects of the action of the environment are not inherited. (Pages 294-5.) Rather more than half of the books by biologists which refer to the matter at all tell us that Lamarck's theory is that the offspring inherit the action of the environment upon the parent. Again, the things involved are the methods and reliability of the "scientists" and "trained investigators" who deny the inheritance of acquirements.

In distinguishing between characters which are acquired and characteristics which are thrust upon the individual by some outside agency, Lamarck said that mutilations are not inherited. (Pages 246, 319.) Practically every biologist tells us that the non-inheritance of mutilations is the strongest evidence against the inheritance of acquirements in general and Lamarck's theory in particular. That statement may be found in a new book by an eminent biologist, published in 1916. Misrepresentation and false statement appear to be the cardinal principles in all attacks upon Lamarck's theory.

Having given this preliminary consideration to what the theory originally was, we may next turn our attention to some of the evidence bearing upon it and the methods employed in getting that evidence. I may add that, as a result of my own investigations, I have slightly modified and considerably expanded Lamarck's theory. However, that is another story which need not be considered at this time.

If a man should exercise the muscles of his hands and arms, such exercise would produce certain definite results in the exercised muscles. The verb "to acquire" means to obtain by effort, exertion or the performance of work, and hence the effect produced in the exercised muscles is an acquirement in the strict meaning of the term. Precisely what this acquirement is is not easily explained physiologically or chemically, but trainers of athletes and trotting horses know that such acquirements consist of increased strength and power in the exercised muscles. The amount of the acquirement can be accurately measured in foot-pounds. The amount of the acquirement can also be represented accurately by the amount of effort or exertion involved in obtaining it.

Will the acquirement which the man thus makes by exercising his muscles be inherited by a son of his who was conceived subsequent to the making of the acquirement?

In getting their answer to this question the biologists take the specific case of a man who exercised the muscles of hand and arm by manipulating a pair of shears upon the tail of a mouse. They

then consider the offspring of that mouse, and particularly the tails on those offspring. Having studied those tails with much scientific detail, they tell us positively that the son of the man will not have better and stronger muscles by reason of his father having developed his muscles by exercise. They learned that fact from the tail of a mouse.

There may be tinge of necromancy about that way of determining a fact, but it is the classical one among biologists. That particular experiment was carried out by August Weismann, the High Priest of biology. *The Journal of Heredity* for January, 1917, refers to this mouse-tail method of discrediting Lamarck's theory as "an appeal to common sense."

There is another method of investigating the same subject. That method consists in measuring up the amounts of acquirement existing in the parent at the different times when his different sons were conceived and then comparing those sons with each other. Also, in tracing different lines of descent from common ancestors, each line having in it different amounts of acquirement per generation before reproducing. This method of investigation says that acquirements are inherited, and that the amount of inheritance is proportional to the amount of the acquirement, measurements being used on both parent and offspring.

The biologists object to this method of investigation on the ground that it represents "pseudo-science," and they say that results obtained should not be considered because anyone proceeding in such a direct manner is guided by preconceived opinions and not by scientific principles. (*The Journal of Heredity* for June, 1915. Also, numerous private letters and some miscellaneous publications.)

Oliver Wendell Holmes made the remark that a man's education should begin with his grandfather. This recognizes the fact that a man's mental powers are developed by exercising them, and assumes that the acquirements thus obtained are passed along to successive generations. It is the same question of the inheritance of acquirements except that it applies to the development of mental power instead of physical power. The biologists use the same investigations for both, and it may be well to look at some of the evidence which they present.

One of their ways of investigating this matter is to raise potato-bugs in a moist atmosphere for ten years and then examine the kind of ether waves reflected from their wing covers. If those ether waves represent the same colors as the ones existing there ten years previously, then there is no advantage in a man having an educated grandfather. If the colored spots and stripes are different, the answer is the same, because in that case the change is due to a mutation.

The idea of consulting various colors for the purpose of determining the quality of human intelligence and the physical powers of animals is a favorite one with biologists. Possibly on the prin-

ciple that a hair from the tail of the dog will cure the bite, they sometimes get these things as near together as the color of one organ and the power of another when both organs are in the same animal. For example, one man tried to learn what color in the hair of a horse gave him the greatest power in his trotting muscles. Another tried to find out what color of eyes produced the greatest human intelligence. And the same thing, in one form or another, has been extended to many forms of insects, birds, fishes, etc.

The two-minute trotter was evolved from the three-minute trotter in less than a century of time. The biologists tell us that this improvement was brought about by selection. They also tell us that selection does not bring about improvement—it only propagates what has been previously produced. Their real belief is that the improvement itself is the result of spontaneous generation, which, however, they sugar-coat by calling it mutation. At the same time they confess that they know nothing about the origin of such progenitors as Hambletonian 10, and condemn all investigations which attempt to see if the inheritance of acquirements had anything to do with it. No "open-minded investigator" would consider that possibility.

There is a plain fact about the origin of Hambletonian which has a bearing upon this point even if the biologists do consider it "mystical"—a favorite epithet for things they don't like. His parents had exercised their trotting muscles to an unusual extent before he was conceived, and his grandparents had exercised their trotting muscles to an unusual extent before his parents were conceived, and his great-grandparents had exercised their trotting muscles to an unusual extent before his grandparents were conceived. In other words, his ancestors for at least three generations acquired, by long-continued efforts, the identical thing which characterized Hambletonian 10, and they made those acquirements before they reproduced.

Using the term "grandfather" in a broad sense to indicate the aggregate of ancestors not too greatly removed, there is one broad fact which may be stated as follows: At no time during the nineteenth century was there any improvement in the American trotter except as a result of educating the trotting muscles of the grandfather. The facts in this matter are facts of record and are indisputable. Those facts have been gathered together, have been tabulated and have been presented to the biologists for their consideration. They have not disputed the facts or attempted to dispute them. They have not even reviewed them or considered them in any way other than to say that such a direct investigation of the inheritance of acquirements represents "pseudo-science," is "mystical," and should be suppressed on the grounds that facts of that kind represent "preconceived opinions."

This is not the first time that biologists have taken that attitude toward investigations made by some individual not within their

own mutual admiration society. It is well known that they were unable to understand an Austrian monk (Mendel) in less than thirty-five years, and I have private correspondence from a university which makes the direct statement that their present attitude in this matter is due to a fear that they might be discredited before the public if they acknowledged that anyone other than a limited few could make a scientific discovery.

One trouble with the biologists is that they have investigated many things which they have called "acquired characters," but which are not acquirements at all. The results of those investigations, taken with their failure to distinguish between things which are acquired and things which are thrust upon an individual, has given them a bias which it is difficult to overcome. As to actual acquirements, they have never investigated the subject at all, and no one of them has ever given evidence that he knows how to measure an acquirement quantitatively. What they may say about the inheritance of such acquirements is mere dictum.

Another trouble with the biologists is that they seem to think that power is a function of structure. They are not the only ones. We have the same kind of men in mechanics, only natural selection has reduced them to small numbers. When a man becomes too active in his efforts to demonstrate that he can get power by some arrangement of structure, we put him in the bughouse—not because he is insane, but because he has "a bug" in his understanding of the forces of nature. Fundamentally, the ideas in the mind of the man who attempts to make a perpetual-motion machine are identical with those frequently found expressed in biological literature.

Still another trouble with biologists is that they fail to distinguish between those things used to describe species and those things which make one animal superior to another. The superman is vastly superior to his feeble-minded neighbor, but the difference between them is not represented by the color of their hair or eyes, or any other thing used in the description of species. Selection is a potent factor in establishing species, or races having specific characters, but it has nothing to do with the improvement of the human race. On the other hand, educating the grandfather is a necessary prerequisite to improving mental or physical power, but it has nothing to do with the formation of species. Confusion and contradiction will continue until these distinctions are made clear and understood. When they are understood there will be something doing in eugenics and animal breeding. We will also have some new knowledge of the relationship between disease and heredity.

NOTE.—The evidence referred to in this article has been condensed and digested by Mr. Redfield in his "Dynamic Evolution," recently published by Putnam & Co. of New York. The evidence in detail may be found in the eighty-odd contributions listed on page 205 of that book.

THE DUTY OF THE MEDICAL MAN IN THE PRESENT CRISIS.*

By Joseph Colt Bloodgood, M.D.,
Baltimore, Md.

THE evening papers report 10,000,000 will register. "President Serenely Confident of the Outcome; No Class Exemptions Contemplated by the Government." Would that this could be said of the medical profession, who as yet do not realize the military situation comes first.

Dana said in the definition of news, that if a dog bite a man, that was not news, but if a man bit a dog, that was news, and he wanted it for exclusive publication.

If the entire medical profession under the age of 55 should volunteer at once for the Officers' Medical Reserve Corps and give the Government or a committee of their colleagues an opportunity to make a selective draft, *this would be news*.

At the present time the number of doctors in the Medical Reserve Corps is so much less than the immediate requirements that it is impossible for the Surgeon-General's office or any of the working committees to make a selective draft. The demand will soon be 10,000, and at the present time there is not more than 4000 available.

The medical man under 55 years of age who does not volunteer his services to the Government not only fails to perform his patriotic duty to his country and to his profession, but also does an injustice to his colleagues who have volunteered their services.

Not until the officers in the Medical Reserve Corps is far greater than the demand will it be possible for the Surgeon-General's office to make a fair selection according to age, experience and specialty.

Therefore, the first duty of a medical man in this crisis is to volunteer his services at once and without any reservation.

Who should decide whether your services are most needed at home or with the army—the individual, the Government, or a special committee of your colleagues?

Up to the present time it has been left to the individual, with results that we are unprepared in the Medical Reserve Corps, as well as in the corps of the army and navy. Not only is the number insufficient, but many of the most important members of the medical profession have not as yet volunteered their services. This is especially true of the most recently trained younger group, men under 35 with hospital experience. These are the men most needed to accompany the troops.

Volunteers for base hospitals have come in sufficient numbers, at the present time more than is needed, but volunteers to go with the troops are conspicuous by their absence in large numbers.

*An address before the American Medical Editors' Association, Tuesday evening, June 5, 1917, at Hotel McAlpin.

Even before the navy and army were enlarged their medical corps were short from 200 to 500 men. Now that these regular branches have been greatly enlarged, the deficiency in the Medical Corps has doubled and will soon treble.

It is my opinion that any young physician with one year's hospital experience should not be prevented from entering the medical Corps of the army and navy if he desires to volunteer for this immediate and life service. In spite of this a number of medical schools and civic hospitals are holding these men to their contracts. It is quite true that the needs of medical schools and civic hospitals must be carefully guarded, but it is my opinion that it should be from the Medical Reserve Corps, and not from the regular medical corps of the army and navy.

When you volunteer, clearly give a description of what you are fitted to do, and not make requests of what you want to do.

Every State and many cities have their special committees on preparedness, whose duty it is to take care of volunteers for the Officers' Medical Reserve Corps. Consult these committees first, and do not overburden the Surgeon-General's office with correspondence or personal visits.

These committees are properly organized to make the physical examination, collect from you all your credentials, give you all the information, and pass judgment. If you object to the decision of this committee you have the right of appeal to the Surgeon-General of the army or navy.

Medical men under 30 with one year hospital experience who desire a medical life career in the army or navy or public-health service should apply at once to the Surgeon-General of the corps they decide to enter. There is a tremendous demand for men of this kind at once, and you are therefore doing a patriotic duty in addition to selecting an honorable career filled with opportunities which should satisfy the most ambitious graduate in medicine.

The duty of a medical man in this crisis, therefore, is to volunteer at once, get your credentials properly before the Committee on Preparedness, see that it is given in detail what your financial sacrifice will be, and have it thoroughly recorded whether you are actually needed in your civic duties. For example, a surgeon to a great industry. Give in the greatest detail what your training has been.

Get others to volunteer and so increase the number to a point that selective draft will be possible.

The examination of recruits for the new army is the first and perhaps one of the most important functions of a military medical officer. The majority of men in civic practice object to this duty because, I believe, they do not understand its importance.

If we have a sufficient number of physicians in the Medical Reserve Corps, this examination of recruits can be performed with dispatch and accuracy and with the protection both of the Govern-

ment and of the individual. An insufficient number of medical men will make this impossible.

When the troops are assembled in mobilization camps it requires a large number of trained physicians to protect them from diseases.

Should epidemics of infectious diseases break out in these camps because of an insufficient number of medical officers, it will be the fault of the medical profession throughout the country who have not volunteered, and not the medical department of the Government.

Medical science has developed to such an extent that we can protect our men, provided the medical department is given the means for this protection.

One of the most important means is sufficient number of doctors.

Remember, any army without ammunition is helpless, and so also is an army without a sufficiently large medical corps.

THE CENTRAL DIRECTORY OF REGISTERED NURSES, INC.

THE Central Directory of Baltimore has now existed for some 18 years. The expenses of its organization and installation were met by subscriptions to capital on the part of a few unselfish and public-spirited nurses; the cost of its maintenance is provided entirely from the dues of nurses and caretakers on its registers. It makes no charge either to the patients it serves, or to the medical profession, and it is essentially an enterprise of nurses, conducted by nurses, not only for nurses, but also for the public.

It aims, first, to bring together, often of necessity, at very short notice, the registered nurse or the trained caretaker and the sufferer needing her services; secondly, to assure, so far as careful and conscientious previous inquiry can assure, the competency, reasonable experience, fidelity to duty and good character and morals of everyone whom it furnishes for employment, and, thirdly, to aid in excluding the ignorant, incapable and unworthy from all branches of the nursing profession, and thus to gain for that profession the dignity, and secure for it the respect and confidence which are indispensable to its usefulness. The Directory is also designed to cause registered nurses from different schools and of different surroundings and associations to better appreciate their community of interest and duty, and thus to work more earnestly, consistently and harmoniously for the elevation of their common profession.

One of its most valuable features is the opportunity for useful and satisfactory employment it affords to efficient and trustworthy caretakers. Often neither the gravity of the patient's condition nor the means of the person who must bear the expense

justify the services of a registered nurse, and yet a trained attendant can greatly promote the comfort and hasten the recovery of the sufferer. In a case like this, the Directory makes every effort to furnish an attendant with a clear understanding as to what may be reasonably asked and expected of her. Its course in this respect serves at once to protect the registered nurses from an unfair, and therefore harmful, competition, and to aid the deserving caretakers (often highly meritorious in their proper field of usefulness) in their legitimate service to the public.

The present situation of the Directory, although in the main highly satisfactory, yet causes its officers some measure of anxiety. They would be glad to see *all* the registered nurses of the city enrolled on its lists; were this the case, they would have no fear lest its patrons might be, perhaps, sometimes disappointed, as they have had occasionally reason to fear might happen in the past. They would also be glad to have *all* of our physicians and surgeons inform themselves more thoroughly and accurately as to its aims and methods, feeling sure that this would result in a more nearly universal employment of its agency to obtain nurses or assistants. Finally, they would be glad to see the nursing profession show a more practical appreciation of the service it renders to nurses and to the public by furnishing the very little additional capital needed to make that service even better than it is.

Book Reviews.

INTERNATIONAL CLINICS. A quarterly of illustrated clinical lectures and especially prepared original articles by leading members of the medical profession throughout the world. Volume I. Twenty-seventh Series. 1917. Philadelphia and London: J. B. Lippincott Company. Price, \$1.50.

This volume contains several freak articles and for this and other reasons seems to us far below the average of its usual excellence.

There is a review of last year's literature.

The article on Chloromata, or green cancer, may interest some readers, but is of little practical value. That on Cirrhosis of the liver arrives at the conclusion that this time-honored disease is not "directly the product of gin" as the poet sang, but probably syphilitic, with a precipitating jog from alcoholic stimuli in some cases.

There is a very thoughtful article on the medical and surgical treatment of gastric and duodenal ulcer which recommends, among other things special care of the mouth, throat and nose.

The postal laws are now so strict that we cannot say safely what we really think of the article on certain alleged "Electronic Reactions." The patient must face the west and stand. He must not have red hair; even red things laid on the head, or anywhere in the room, disturb the results. A few drops of blood from

tuberculosis, syphilitic or carcinomatous patients will, by proper arrangement of magnets, give, when laid dry on a slide against the spine, a change of tone on percussion of the abdomen, if the patient has old or recent lesions of either sort. By noting exactly the place where the resonance is changed you tell which disease is beneath. Congenital syphilis gives a different area from acquired. We will not insult the reader's intelligence by further comment.

THE MEDICAL CLINICS OF CHICAGO. January, 1917. Volume II. Number 4. Published bi-monthly by W. B. Saunders Company. Philadelphia and London. Price, \$8 per year.

There are a number of instructive clinical cases of splanchnoptosis, pulmonacy abscess, gastric ulcer, etc., for those readers who cull from such recitals valuable therapeutic suggestions. We find no new material of special interest.

We confess to a feeling of regret every time we find a teacher in high authority using the name of Psychiatrics for an attack upon the foundations of religion. One might as rightfully base a condemnation of all psychiatry on the excesses of its sexual dreamists, as of all religion on the ecstasies and lamentations of insane spinsters.

Religion and psychiatry, in their normal development, are both respectable, and the suspicion is always ready to arise that those who condemn them are those who know least about them. There is a great interdependence of all truths, one upon another, each department of truth being strengthened and rounded out by an acquaintance with the other, which weakens the authority of a narrow critic even in his own little specialty. Psychiatry surely may echo the ancient lament—"Deliver me from my friends; I can take care of my enemies myself."

DIAGNOSIS AND TREATMENT OF ABNORMALITIES OF MYOCARDIAL FUNCTION, with special reference to the use of Graphic Methods. By T. Stuart Hart, A.M., M.D., Assistant Professor of Clinical Medicine in the College of Physicians and Surgeons, Columbia University. Illustrated with 248 engravings; 240 of them original. The Rebman Company. New York. 1917. Price, \$0.00.

A thorough knowledge of the heart in its diseases and distresses would seem to be one of the fundamentals of equipment for general practise, yet the average in this line is very low indeed. An examination on Auricular Fibrillation and Sinus Arrhythmia would do dreadful slaughter among established practitioners, yet these are conditions that may come up for diagnosis and treatment any day, and in any family, not by the specialist, but by the family doctor. The book before us discusses in a very thorough, yet very practical way each phase of heart-muscle disorder, and the various remedies offered for its relief. The reader need not be afraid of the intricacies of discussion suggested by the numerous

electro-cardiograms, for the author sets forth in a very simple way the clinical significance of each and the remedies to which it points.

Each clinical form of heart disturbance which involves its muscle is taken up in a separate chapter; then the mixed cases are considered; then general conditions and general drugs and other remedial measures, and the book closes with a chapter on the indications for treatment afforded by different types of rhythm. The binding and printer's work are very attractive.

THE RESPIRATORY EXCHANGE OF ANIMALS AND MAN. By August Krogh, Ph., D., Reader in Zoophysiology, University of Copenhagen. With diagrams. Longmans, Green & Co., 39 Paternoster Row, London; New York, Bombay, etc. 1916. Price, \$1.80 net.

This volume is purely scientific and can have no interest to the general practitioner. Although the problems of medicine eventually benefit by applications of and deductions from such investigations, the process is very intricate. Yet upon the understanding of the internal life-processes of the body must in large part be built the medicine of the future, for it is to a want of understanding of the intimate processes that the failures of therapeutics is often due.

It is the purpose of the publishers to issue a uniform series of monographs of these subjects, which can more easily be kept up to date than large volumes, by the issue of new monographs on any particular subject, at a small cost, as progress in that subject warrants the issue.

AN INQUIRY INTO THE PRINCIPLES OF TREATMENT OF BROKEN LIMBS. A philosophico-surgical essay with surgical notes. By William F. Fluhner, M.D., Consulting Surgeon to Bellevue and Mount Sinai Hospitals. New York: Rebman Company.

In this volume the various procedures of treatment peculiar to the author's practice, some of them avowedly obsolete, are described for the purpose of illustrating his claims to the origination of certain lines of modern treatment. This confusion of the obsolete with the permanent, and the addition of numerous philosophical digressions, makes it very difficult for the reviewer to form a true estimate of the value of this part of the book.

The later chapters, dealing with a hospital service of 45 years, and reaching back into the pre-antiseptic era, will be read with interest by many practitioners.

There are numerous beautiful cuts showing the author's plaster-of-paris splint with tin strips and his open treatment of wounds and fractures, with various apparatuses devised by him for facilitating handling and healing.

THE NEW METHODS OF BLOOD AND URINE CHEMISTRY. By R. B. H. Gradwohl, M.D., Director of the Pasteur Institute of St. Louis and the Gradwohl Biological Laboratories, and A. J. Blaivas, Assistant in the same. With 65 illustrations and 4 color plates. St. Louis: C. V. Mosby Company. 1917. Price, \$2.

This is a little book which we recommend to perusal and purchase by all our readers. It is first-class in every respect. The author believes that the analysis of the blood is of more practical value to the doctor than that of the urine, and that to one who can secure the equipment it is quite as practicable. His first concern, therefore, is to describe and depict the apparatus and reagents necessary. Directions for the analysis of the blood follow; then for the analysis of the urine. The four closing chapters are of exceeding interest to the bedside doctor—on Blood Sugar, Acidosis, Blood Changes in Gout, and Blood Chemistry and Nephritis.

These later chapters teem with practical deductions for therapeutic guidance in cases of dyspnea, gout, infantile diarrhea and diabetes. The author not only suggests treatment, but gives methods and doses.

CLINICAL AND LABORATORY TECHNIC. By H. L. McNeil, A.B., M.D., Adjunct Professor of Medicine and Instructor in Physical Diagnosis, University of Texas Medical School, Galveston, Texas. Illustrated. St. Louis: C. V. Mosby Company. 1916. Price, \$1.

It is very convenient to have on the table where one makes clinical analyses a little guide like this, concise, clear and up to date.

It covers the questions and points of investigation which need to be borne in mind at the bedside, in taking the statement of the patient in regard to his history and in the physical examination. It goes on then to laboratory analyses—of urine, blood, sputum, gastric and duodenal contents, feces and spinal fluid—and closes with the Wassermann reaction and a list of laboratory stains and an index.

BLOOD-PRESSURE FROM THE CLINICAL STANDPOINT. By Francis Ashley Faught, M.D., formerly Director of the Laboratory of Clinical Medicine at the Medico-Chirurgical College, Philadelphia. Second edition, thoroughly revised. Octavo of 478 pages, illustrated. Philadelphia and London: W. B. Saunders Company. Price, \$3.25 net. 1916.

Already in the first few pages of this attractive volume the reader is impressed with the confidence that in a region so new and lending itself so easily to false leads he has a guide both competent and wise. The subject is one of the highest importance in ordinary practice, both in the office and at the bedside, and is

capable of very much greater development for clinical service. The physician should have within easy reach a guide to this group of vital symptoms, and he can find none more reliable and easy to understand than this before us. Anyone can understand the explanations given concerning the different clinical instruments devised for estimation of blood-pressure, the advantages and disadvantages of each; the methods of use of each; the normal pressure for each age and sex, and the conditions of activity and environment under which it varies; the effect of acute infections upon it; of chronic infections; of other disease states. There are separate chapters on too low pressure and too high pressure, on venous and capillary pressure and on the most important medical, surgical and obstetrical conditions; one on life insurance examinations, and two very satisfactory chapters on drug treatment and on other agencies for preventing and relieving abnormal blood-pressure.

THE CLINICS OF JOHN B. MURPHY, M.D., AT MERCY HOSPITAL, CHICAGO. Edited by P. G. Skillern, Jr., M.D. December, 1916. Published bi-monthly by W. B. Saunders Company. Philadelphia and London. Price, \$8 per year.

All we need to tell the reader is that, with the death of Dr. Murphy, this number closes the life of this most informing and instructive publication. Several clinical cases of 1915-16 complete the list of stenographic reports. The number contains a detailed account of the sick history of this eminent pioneer in surgery, and of his death from angina pectoris. The pity of it is that, after examination and treatment by so many leaders of the profession through so many years, the autopsy should show that his fatal blood-vessel disease was due to an old focus in the kidney which might easily have been removed.

We need not here repeat the eulogies from home and foreign surgeons of this truly great man, who, tormented by obscure pains, led the leaders of surgery into untrodden fields and filled all who heard him with new enthusiasm. A list of his writings is appended.

THE CLINICS OF JOHN B. MURPHY, M.D., AT MERCY HOSPITAL. Edited by P. G. Skillern, Jr., M.D., of Philadelphia. Vol. V, No. 5, October, 1916. Published Bi-Monthly by W. B. Saunders Company, Philadelphia and London. Price per year, \$8.

It is always refreshing to find on your office table one of these clinical reports. The skill of this famous surgeon is but a development of that which may be attained by others, masters of their calling, but to this is added an individuality which adds peculiar interest to his lectures. Who could resist this thrust: "Nothing is as good for acute rheumatism as salicylic acid. Of course it is not advertised, as it has no proprietary value. If you can get it in the acute stage, you can find out just where the infection is coming from. It is nasal or pharyngeal—in the acute stage more nasal

than pharyngeal. The tonsil takes fifth place and the teeth fourth in the chronic joint lesions. The profession has gone mad lately about the part the teeth play in the chronic joint lesions. Scores of mouths are just cleaned out without cause." Or this: "This cancer problem is a terrible one. In the 35 years I have been practicing surgery the condition has not improved 10 per cent. The people go to the doctor much earlier. The reason they do not take his advice is that he gives them the impression that he does not know what he is talking about, from something he says or does."

The leading article is on varicose veins and ulcers, and another article later warns against operating on them after milk leg. Among the many reports, we notice especially one on coxa vara due to enlarged thymus.

LIPPINCOTT'S NURSING MANUALS. Care and Feeding of Infants and Children. A Textbook for Trained Nurses. By Walter Reeve Ramsey, M.D., Associate Professor of Diseases of Children, University of Minnesota; Associate Visiting Physician to the University Hospital; Visiting Physician to St. Paul City and County Hospital; Medical Director St. Paul Baby Welfare Association, etc. Including suggestions on nursing by Margaret B. Lettice, Supervising Nurse of the Baby Welfare Association, and Nann Gossman, Nurse in Charge of the Children's Department, University Hospital. 123 Illustrations. Philadelphia and London: J. B. Lippincott Company. Price \$2 net.

The above should vouch for the standing of this manual, which covers a very large subject, or group of subjects, very difficult to condense into one small volume with even distribution of emphasis. We ourselves would prefer separate volumes, presenting the medical aspects of childhood from the standpoint of the nurse, and from the standpoint of the physician. We believe that greater clearness and greater thoroughness of presentation may thus be attained. If they are contained at all in the same cover, they should be treated separately, with credit to each author for work done. The attitude of mind of the nurse is so different from that of the doctor toward the facts of the sickroom that the combination of the two functions cannot possibly give the highest results. By those who differ with us on this point this manual will be found very satisfactory. The publisher's work is excellent.

THE MOTHER AND HER CHILD. By William S. Sadler, M.D., Professor of Therapeutics, the Post-graduate Medical School of Chicago, and Lena K. Sadler, M.D., Associate Director of the Chicago Institute of Physiologic Therapeutics. Illustrated. Chicago: A. C. McClurg & Co. 1916. \$1.50.

This little book has many points of excellence, and may be recommended to those who have experience enough to cull the good from the bad in any treatise, but to the physician as a handbook

for instruction to the mothers in his practice we cannot recommend it, on account of the nine pages in it in which the authors lay down rules concerning caretaking. There are divergencies of view as to the dignity and developmental value of mother care, as a sufficient career in itself, but it is probable that the woman with mother instincts (not ambitions) will, with a little more care for her intellectual side, continue to give motherhood its old honored place among the very highest things of earth.

Experience in public school work shows that the child whose mother goes out to work is nearly as badly off as the child whose father drinks. Among the wealthy, few mothers make slaves of themselves. For the middle classes the advice that the mother should have a career outside the home and hire by the year different art and music students in their late teens as "substitute mothers" to live in her house and bring up her children for her, while she careers day or night, is very questionable. The hired student is not trained in child-rearing; the husband may want to take private art lessons at home; the student may feel lonely. If there is another edition of this book, we hope this chapter will be rewritten or left out.

PRACTICAL URANALYSES. By B. G. R. Williams, M.D., Director Wabash Valley Research Laboratory. Author of Laboratory Methods. Illustrated. St. Louis: C. V. Mosby Company. 1916. Price \$1.25.

The author is engaged in the enterprise of enabling the general practitioner to carry out in his office the expert analyses required for modern diagnosis. To this end he has presented this and another little handbook. The volume before us is clear and concise, and abounds in practical suggestions for the busy doctor. Much emphasis has been laid "upon findings often considered minor," and for difficult questions and exhaustive exposition the worker is referred to larger treatises. We question the desirability of using a variant of the familiar "urinalysis." Our language needs simplification rather than needless complication. A closer critical reading of the text would improve the book, which is, however, up to the rather careless standard of American textbook excellence.

HUGHES' PRACTICE OF MEDICINE. Including a section on Mental Diseases and one on Diseases of the Skin. Eleventh Edition, Revised and Enlarged. By R. J. E. Scott, M.A., B.C.L., M.D. Fellow of the New York Academy of Medicine, etc. With 63 Illustrations. Philadelphia: P. Blakiston's Son & Co. Price \$3 net.

The effort of the author has been to lay stress on diagnosis and treatment, which are the main business of the practitioner, whose attention is centered on finding out what is the matter with his patient and then applying something that will cure him, or at least make him better. The author has excluded new things which have

not been thoroughly tested by observation and experience, and devoted his space to those only which he considers of real merit. Yet, with this proviso, the work is thoroughly up to date, as some ten new articles are presented and quite a number of others, especially those on the newer tests, signs and reactions and those on the use of vaccines, have received important additions. In the former editions the author began the work of regrouping diseases according to their real relations, as the classification of pneumonia and tuberculosis as infectious diseases and of herpes zoster as a disease of the nerves, and this arrangement is continued in the present volume.

THE SURGICAL CLINICS OF CHICAGO. February, 1917. Volume I. No. 1. With 83 illustrations. Published bi-monthly. Philadelphia and London: W. B. Saunders Company. Price per year, \$10.

This volume contains a large number of most instructive papers. One of the most striking is that on the cure of large denudations of the back of the hand and wrist by lifting a band of skin from the abdomen and thrusting the hand through it until the under side of the band grows to the abraded place. Previously the motionless tendons are dissected up and placed on a bed of fat and fascia lata.

Among other articles of importance are those on "Gall-stones" and on "Hernias," by Dr. Bevan; on "Tendoplasty for Wrist-drop," by Dr. Speed, and on "Transplantation of Fascia Lata for Anterior and Posterior Defects of the Trunk Walls," by Dr. Kanavel.

A large cavity left after empyema of the chest is handled and filled in a striking way by a method described by Dr. Beck.

With such early issues, this new journal has certainly a most promising future.

TRANSACTIONS OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION, held at Washington, 1916. Published by the Association, 44 West 49th street, New York City.

A large part of this volume is, of course, of specialistic interest only. Several papers, however, will appeal to the general practitioner.

The "tonsilloscope," if of actual value, is so as yet only in the hands of those who have made a very exhaustive study of its showings.

The article on diphtheria carriers as subjects of throat operations will interest every physician, as will also the report of a throat epidemic from milk reported, in its surgical aspects, from Albany.

The study of the relations of the hay fever group of distresses to pollen and animal emanations is very fascinating reading. The findings resulting from the application of solutions of

a large number of floral vegetable and animal substances to abrasions in the skin, and the attempt therefrom to build a theory as to the cause and diagnosis of the hay fevers and of certain indigestions, are calculated to at least keep the physician's mind from stagnation.

The very remarkable cure of a laryngeal cancer by radium excites confidence in the future of that wizard remedy, while the statement that the nasty ulcerations which sometimes follow it do not set in sometimes for six months or more after its use is discontinued make us realize that it is not to be lightly resorted to. To cure a man's nose with radium and send him home happy and a year later find that a radium ulcer appeared and ate the nose practically all off is not pleasant for the doctor.

To the surgeon the illustrated papers on sinus operations are very informing. The battle of the tonsils seems as far from decision as ever, although the certainty of infections from the nasopharyngeal region is growing in all alert minds.

BETTER BABIES. By Samuel A. Visanska, Ph.G., M.D. Designed for Physicians, Nurses and Mothers. Atlanta, Ga.: Foote & Davies Company. 1917. Price, \$1.50 net.

We have long held the opinion that the Southland should take up publication in a larger way. It is not good that any portion of a great nation should be voiceless. Medicine is such a many-sided profession, and the practice of it is so largely a matter of common sense, that every thoughtful physician should leave some record of his experiences and methods in printed form.

It is with much pleasure, therefore, that we recommend this little "first effort." We believe it will do a great deal of good, especially to Southern mothers.

The author has a practical wisdom which is so rare that we hope he will write other books along medical lines for mothers—even for fathers or young people. We do not agree with everything he says, but his views are worth testing always. His special pleading for the improved bellyband and diaper may not banish pelvic deformities, but it will open the eyes of many mothers and comfort many babies.

We admire his attitude toward bottle-feeding—it is so like the famous chapter on "the snakes of Ireland." We do not recommend separate beds—they may cause alienation of affections. Where mutual kindness exists between husband and wife, they are not likely to do each other sexual harm at any time, and the fetus that cannot survive the ordinary course of married life had better give up and let the next one have a chance. Of course, when the wife has uterine damage from old injuries, special care should be exercised; but behind all unreasonable barriers between wife and husband lurks the "other woman."

The book needs better editorial supervision, and the publisher has taken liberties with the ordinary order of things. Some of the

illustrations are too large, and the ugly one with exposed intestines ought not to be thrust at an expectant mother.

A TREATISE ON MEDICAL PRACTICE. Based on the Principles and Therapeutic Applications of the Physical Modes and Methods of Treatment. (Non-Medical Therapy.) With Explanatory Notes Concerning the Nature and Technic of the Different Physical Agents and Methods Employed. By Otto Juettner, A.M., Sc.M., Ph.D., M.D., Author of Modern Physic-Therapy, Physical Therapeutic Methods, Daniel Drake and His Followers; Editor of The Songs of the University of Cincinnati; Surgeon Medical Reserve Corps, United States Army; Fellow of the Academy of Medicine of Cincinnati, the American Medical Association, the American Therapeutic Society, the American Academy of Medicine, the American Physio-Therapeutic Association, the American Editors' Association, the Western Association for the Preservation of Medical Records, the Academy of Medicine of Mexico, the Royal Society of Medicine of England, the Royal Microscopical Society, London, England, the Societe Francaise d'Electro-therapie, Paris, France, the Royal Anthropological Institute of Great Britain and Ireland, the Roentgen Society of London, the Deutsche Roentgen-Gesellschaft, the Roentgen-Vereinigung, Breslau, Germany, the Deutsche Gesellschaft Fuer Geschichte der Medizin und der Naturwissenschaften, Leipsic, Germany. New York: A. L. Chatterton Company. Cloth, \$5 net. 1916.

That medicine falls far short of our most ardent expectation in many instances cannot be denied. For this reason there has sprung up in the medical profession a spirit of therapeutic nihilism, but unfortunately the profession as a whole has not perfected itself in the rational application of those other agencies within its grasp to augment or replace internal medication. It is for this reason that so many cults are now in such a flourishing existence. Nothing has been introduced to alleviate human ills without a measure of truth and usefulness attached thereto. So it is that osteopathy, Christian Science, New Thought, etc., have succeeded in building up a following. The followers of these practices have tried medicine and found it wanting. We might just as well look a disagreeable state of affairs in the face and admit the fact, not try by subterfuge to lull ourselves into erroneous deductions for the reasons thereof. The laity do not care whether the methods employed by those into whose hands they trust themselves are scientific or not, but whether they are restored to health. It is therefore time that the profession be bestirring itself and learn whatever of value it can from such physio-therapeutic measures as hydrotherapy, electro-therapy, psychanalysis, psychotherapy, massage, dietetics, mechanotherapy, suggestion, etc. Whilst we cannot subscribe to many of

the teachings expostulated by Doctor Juettner, as, for example, appendicitis is only exceptionally a surgical disease, and that in the vast majority of instances it belongs to the internist in the same sense in which an inflammatory condition affecting any portion of the alimentary canal is primarily a medical and not a surgical subject. This is piffle of the rankest sort and nauseating to one who has stood over the operating table and seen the results of neglecting an early operation. Though we cannot agree with many of the statements of Doctor Juettner, withal there are a number of useful suggestions embodied in his treatise. Besides, the doctor is entitled to much credit for calling the attention of the profession to the useful activities to which mechanical agencies may be placed in the alleviation of human ills.

INTERNATIONAL CLINICS. Edited by H. M. R. Landis, Philadelphia, U. S. A. Vol. II. Twenty-sixth Series, 1916. Philadelphia and London: J. B. Lippincott Company. Cloth, \$2 net.

This number is up to International Clinics standard. It is replete with articles of unusual interest to the physician, namely, the Indication for Venesection, Clinical Manifestations of Unusual Lesions in the Abdomen, Mycology As a Part of Practical Dermatology, the Relation of Mental Defect to Crime, the Conduct of Breech Presentations, Colon Resection and Its Indications, Cancer of the Rectum, etc. In these clinics are to be found the newer phases of medicine. This issue is no exception to the rule. Emphasis is placed on diagnosis and treatment. This is what the doctor and his patient wants. Without a proper diagnosis it is a difficult matter to cure the patient. These articles will help you in arriving at a proper diagnosis and a rational treatment.

THE MEDICAL CLINICS OF CHICAGO. 1917. Volume II. No. 5. Published bi-monthly by W. B. Saunders Company, Philadelphia and London. Price per year, \$8.

The value of such publications is that through them the practitioner is kept abreast of the most recent advances in medical diagnosis and treatment. Much of their material must necessarily be of unstable value, as new methods are often by experience found unreliable.

In each of these articles the reader will find, among many familiar facts, a few new things of practical value. That on chlorosis is interesting, chiefly from the thoroughness with which a case of this time-honored puzzle is studied in the light of modern clinical laboratory methods.

The new entity, Suppressed Anaphylaxis, by which the modern practitioner must designate his "stomach rashes," his "cat anti-pathys" and his "hay fevers" (if he don't, some knowing consultant or successor will, to his lasting disgrace; or he may suspect

"protein supersensitiveness," if he so prefers), receives here some interesting illustrations.

There is an analysis of three cases of Parkinson's disease, under which may be recognized our old friend, and the disease of our old friends, paralysis agitans, which the lecturer thinks is evidently not a single disease, but a group of several having this common symptom.

There are several interesting cases of pericarditis, and an exhortation to attention to the new importance of oral foci of infection in the causation of systemic diseases.

The publication is new, and it can, of course, not vie in attractiveness of a certain sort with those on surgical themes, but it promises well and deserves recommendation to all aggressive practitioners.

THE STRAIGHT METHODS OF DIRECT LARYNGOSCOPY, BRONCHOSCOPY AND ESOPHAGOSCOPY. By Richard Hall Johnston, M.D., Baltimore, Md., F.A.C.S., Laryngologist to St. Joseph's German Hospital; Consulting Laryngologist to the South Baltimore Eye, Ear and Throat Hospital, the James L. Kernan Hospital for Crippled Children, the Children's Hospital School, the Maryland Asylum and Training School for Feeble-Minded; Visiting Laryngologist to the Maryland Tuberculosis Sanatorium; Member of the Baltimore City Medical Society, the Medical and Chirurgical Faculty of Maryland, the Southern Medical Society; Fellow of the American Laryngological, Rhinological and Otological Society, the American Academy of Ophthalmology and Oto-Laryngology. Publishers, the *American Journal of Surgery*. 1915.

This monograph of 264 pages is devoted entirely to the methods of, instruments, and indications for passage of the laryngoscope, bronchoscope and esophagoscope. After a brief description of the instruments necessary for the operation, the author launches into a discussion of the various ways of inducing insensibility to pain, the anatomy and physiology of the bronchial tree and of the esophagus, direct laryngoscopy, diseases of the larynx amenable to treatment through the direct laryngoscope, tracheo-bronchoscopy, diseases amenable to, treatment by tracheo-bronchoscopy, bronchoscopic operations and methods of treatment, esophagoscopy, diseases amenable to treatment through the esophagoscope. Notwithstanding, says the author, the fact that the *Journal of the American Medical Association* claims that alypin is just as toxic as cocain, a fair comparison is all in favor of the former drug. The writer, after an extensive use of alypin and novocain, is prepared to state that the anesthetic property of these drugs is just as great as cocain; that the anesthesia lasts as long; that they can be used in stronger solutions; that they can be repeated as often as may be necessary, and that he has never seen toxic symptoms from their use. Further on he gives his method of direct laryn-

gосcopy. It differs from other methods in the position of the head being nearly straight when the instrument is introduced and in the tube. Long ago the author became convinced that relaxation of the neck muscles was the most important point in successful tube work. He believed that if such a method could be devised, direct laryngосcopy would become more popular and thereby more useful. No one will deny that the extended position of the head is unnatural and that it must be more difficult for patient and operator with all the muscles contracted. The operator must overcome this unnatural position by pulling against muscles that are already straining. The position used by the writer has been used by him for more than four years and has proved eminently satisfactory from every standpoint. It is easy to learn and will prove satisfactory in every patient, regardless of physical conditions. The writer then describes the method in all of its details, and those affections which he has found amenable to treatment by direct laryngo-tracheo-broncho-esophagoscopy. It is a fair and unbiased exposition of the place this modern method has taken in the diagnosis and treatment of diseases of the tracts aforementioned.

BANDAGING. By A. D. Whiting, M.D., Instructor in Surgery at the University of Pennsylvania; Surgeon to the Germantown Hospital and to the Southern Home for Destitute Children; Assistant Surgeon to the German and the University Hospitals, Philadelphia. Illustrated. Philadelphia and London: W. B. Saunders Company. Baltimore: The Medical Standard Book Company. 1915. Cloth, \$1.25 net.

Bandaging as an art has undergone a most remarkable deterioration, therefore any agency which calls attention to this important feature of surgical success should exert a wholesome influence in arresting the attention of the profession. The present work is practically a repetition of the author's course in bandaging at the University of Pennsylvania, and should admirably meet the needs of the beginner in acquiring the rudiments of bandaging, as the course of each special bandage is followed in detail both by descriptive matter and illustration. It will be found by students and nurses an excellent guide in acquiring the correct art of bandaging.

ULTRA-VIOLET LIGHT. By Means of the Alpine Sun Lamp. Treatment and Indications. By Hugo Bach, M.D., Bad Elster, Saxony, Germany. Authorized Translation from the German. 1916. Cloth, \$1 net. New York: Paul B. Hoeber.

This little book describes sufficiently but briefly the things worth knowing concerning the technic of the Alpine Sun Lamp, and also gives a detailed review of its indications. Though much is already known concerning the beneficent effect to disease from exposure to its influence, it is still in a development stage and the

study is by no means concluded. This book will familiarize those desiring the information with the development to date. Besides a description of the lamp, the book goes into a discussion of ultra-violet light and its use. Its application has been followed by beneficial results in chronic teno-synovitis, osteomyelitis, burns, ulcers of every sort, bruises, granulating wounds, acne, furunculosis and carbuncles, rhinophyma, psoriasis, inflammation of the nails, urticaria, eczema, and a raft of other ills to which man is heir. If it will only do a small part of what the author claims, it is an important adjunct to our therapeutic agents for fighting disease. At any rate, the method bears investigation. Those interested will find the above-mentioned book an excellent exposition on what is known concerning the many phases of the Alpine Sun Lamp.

EXAMINATION OF THE URINE AND OTHER CLINICAL SICKROOM METHODS (late Husband's). By Andrew Fergus Hewat, M.B., Ch.B., M.R.C.P., Ed. Tutor in Clinical Medicine, University of Edinburgh; Lecturer Edinburgh Post-Graduate Vacation Course. Fifth Edition. New York: Paul B. Hoeber. 1916. Cloth, \$1 net.

This booklet contains in brief all the information that the clinician will find necessary to thoroughly and satisfactorily test urine, blood, feces, sputum, pus and gastric contents. Clinical microscopy has developed into such a broad science that to even touch the field requires a large book, but the methods actually available to the doctor desirous of intelligently treating and handling patients as they come to him can be encompassed in a small book is fully attested by this booklet of Hewat's. It contains a sufficiency of tests on the subjects covered in its pages and directions for successfully carrying them to completion. It is such a book as is needed by the mass and should prove very serviceable to this class when desirous of brushing up in the examination of urine, feces, sputum, etc. As such it gives us great pleasure in recommending it to our readers.

THE DIAGNOSIS AND TREATMENT OF HEART DISEASE. By E. M. Brockbank, M.D. (Vict.), F.R.C.P., Hon. Physician Royal Infirmary, Manchester; Clinical Lecturer on Diseases of the Heart, Dean of Clinical Instruction, University of Manchester. Second Edition. With Illustrations. 1916. Cloth, \$1.25 net. New York: Paul B. Hoeber.

This little book will be found of great usefulness by student and general practitioner in grasping the essentials of cardiac diagnosis. It is one thing to know that a heart is not functioning properly and another to ascribe the trouble to the proper valve. Treatment that is indicated in one instance may be contraindicated in another. It is therefore absolutely essential to the physician, if he intends treating cardiac affections intelligently, that he first

ground himself thoroughly in diagnoses. Brockbank's book starts one out on the right track, and if the teachings therein are thoroughly grasped, the diagnosis of cardiac diseases will be greatly simplified. It gives us great pleasure to recommend it to our readers as one of the best and most reliable books extant dealing with the principles underlying the diagnosis and treatment of heart disease.

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures and Specially Prepared Original Articles, by Leading Members of the Medical Profession Throughout the World. Volume III. Twenty-sixth Series. 1916. Philadelphia and London: J. B. Lippincott Company. Price, \$2.

There are many articles by leading men in this volume, but the one which seems worthy of note here is by our friend Dr. Baetjer, whose reliability of observation and conservative views in regard to the x-ray and its possibilities are well known.

There has crept into the minds of many practitioners the suspicion that the diagnosis of tuberculosis is sometimes too lightly given, although it is probably better for the community that the error should be in this direction. But it is bad for the individual patient and for the medical profession that errors should be made. In this article the author tells us that before clinical evidence of tubercular lung disease becomes plain there is no way of determining the diagnosis by the x-ray. There may often be slight suspicious changes at this time, but there is no way of knowing either that they are tuberculous or that they are recent. As practically every lung has tubercular traces by middle life, the difficulty is apparent to all observers. The x-ray specialist should in these cases simply report an active and an inactive lesion. The author feels that it is absolutely wrong to send a patient to a sanitarium or to the treatment upon the roentgenological examination alone. Even cavities in the lung may not be tubercular, but influenzal, as in a case quoted. He has seen himself two cases where a diagnosis of tuberculosis was made from clinical and roentgenological examination, which three years later were positively proven to be influenzal.

GERIATRICS, THE DISEASES OF OLD AGE AND THEIR TREATMENT, Including Physiological Old Age, Home and Institutional Care, and Medico-Legal Relations, by I. L. Nascher, M.D., Chief of Clinic Department of Internal Medicine, Mount Sinai Hospital Dispensary, New York; Formerly Special Lecturer on Geriatrics, Fordham University School of Medicine. With an introduction by A. Jacobi, M.D. Second Edition, revised, with fifty plates containing eighty-one illustrations. Philadelphia: P. Blakiston's Son & Co. Price, \$5 net.

As many of its most interested readers will be physicians of advancing years, the printing is unusually clear and attractive to

the eye, and no detail is omitted which will render its study more pleasant. We remember with what eagerness we welcomed the first edition of this valuable work, the first in America after an interval of more than thirty years. While pediatrics was receiving most earnest and extensive study, geriatrics was practically unknown, even as a name. Yet hosts of physicians knew that the treatment of the aged was as truly a specialty as that of children, and that as few attained real excellence in the one as in the other. Nothing can better testify to the need of development of geriatrics than the incompetence of old people's homes to meet the needs of their inmates and the despair of the average family as to the proper management of their aged members. The basic proposition of the book is that "senility is a physiological entity analogous to childhood and not a pathological state of maturity," and that "in dealing with senile diseases the object must be to restore the organism to the normal senile state and not to the normal state of maturity." The author therefore begins with a discussion of the normal senile state, and proceeds then to consider how each of the most familiar diseases occurring in old age is modified by that condition, and the treatment appropriate to each disease in the aged.

THE NERVO-MUSCULAR MECHANISM OF THE EYES, AND ROUTINE IN EYE WORK. By G. C. Savage, M.D., Author of *New Truths in Ophthalmology*, etc. With three full-page plates and four cuts. Published by the Author, Nashville, Tenn. Price, \$1.

This little double monograph of seventy pages deals with two subjects of strictly specialistic interest. The effort is to refute the statement of a leader in ophthalmic practice that "the muscle study is a myth, or at most is not worthy of serious consideration," and to prepare the oculist of years' standing for competition with the graduate of the near future when the efforts of the ophthalmological societies shall have greatly raised the level of preparation for the practice of this intricate specialty.

NITRO BY HYPO. By Edwin P. Haworth, Superintendent of the Willows Maternity Sanitarium. Kansas City: The Willows Magazine Co. 1915. Cloth, \$1.00 net.

This is a book of a series of short sketches on topics of general interest to the profession. It is replete with optimistic thoughts and sentiments, some one of which should meet the need of a physician in the hour of discouragement, and in the hour of trial and tribulation its sentiments will prove a staff and support. It contains many little suggestions which will enable one to better endure disappointment and sorrow.

MARYLAND MEDICAL JOURNAL

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BALTIMORE, JUNE, 1917

THE DUTY OF THE MEDICAL PROFESSION IN THE PRESENT CRISIS.

WE call attention to the address of Dr. Bloodgood, published in this issue, in which notice is directed to the urgent need of a larger number of young physicians to volunteer for service with the troops, or in any other capacity in which their services can be utilized to the best advantage. The older physicians have offered their services, and a number of them are already in France with base hospitals, but the great need is for doctors under 35 years of age, active young men in the prime of life. There is need for 12,000 such medical men to properly officer the 1,000,000 soldiers who are about to be organized into armies.

The medical profession has never been lacking in patriotism, and, though apparently the call is being answered slowly, we have faith to believe that as it appreciates the need there will be a satisfactory response. The navy will take men who have just graduated, and to such it offers an immediate career; but the army requires the candidate to have had at least one year of hospital work before being accepted for military service. To such it appeals strenuously to volunteer. Of course, if a sufficient number cannot be obtained by voluntary offering, it may become necessary to apply the selective draft. *Young physicians of Maryland, offer yourselves, and do it now.*

Medical Items.

DR. HUGH HAMPTON YOUNG, major in the Officers' Reserve Corps, who is head of the commission appointed officially to represent the medical service of the American Army abroad, has arrived in London.

At the annual meeting of the Women's Medical Society of Maryland, held in Baltimore, May 23, Dr. Caroline B. Towles was elected president; Dr. Anna D. S. Abercrombie, vice-president; Dr. Flora Pollack, corresponding secretary; Dr. Mary C. Willis, recording secretary, and Dr. Mary F. Voeglein, treasurer, all of Baltimore.

THE complete list of physicians of the Johns Hopkins base hospital unit, who have arrived in England, is as follows: Dr. J. M. T. Finney, major and chief of the surgical staff; Dr. George Walker, captain and adjutant; Dr. Harvey B. Stone, captain and quartermaster; Dr. W. S. Baer, captain, orthopedic surgery; Dr. W. A. Fisher, lieutenant, general surgery; Dr. B. M. Bernheim, captain, vein surgery; Dr. George J. Heuer, lieutenant, brain surgery; Dr. H. R. Slack, lieutenant, assistant surgeon; Dr. H. N. Shaw, lieutenant, assistant surgeon; Dr. L. B. Whitham, lieutenant, assistant surgeon; Dr. L. R. Wharton, lieutenant, assistant surgeon; Dr. C. C. Guthrie, captain, assistant physician; Dr. V. R. Mason, lieutenant, assistant physician; Dr. W. M. Happ, lieutenant, assistant physician; Dr. V. P. W. Sydenstricker, lieutenant, assistant physician; Dr. T. R. Boggs, captain and chief of medical staff; Dr. C. A. Waters, lieutenant, Roentgenologist; Dr. W. A. Baetjer, lieutenant, pathologist; Dr. Henry Eaton of Boston; Dr. Benjamin Kline, chief of the laboratory staff; Dr. J. H. King, assistant physician; Dr. B. Lucien Brun, lieutenant, dentist; Dr. Livius Lankford, lieutenant, dentist. Captain Thomas M. Tipton of the regular army accompanied the physicians as quartermaster.

THE National Committee for Mental Hygiene has created a subcommittee on furnishing hospital units for nervous and mental disorders to the United States Government, the project having been approved by Surgeon-General W. C. Gorgas of the United States Army.

This subcommittee, of which Dr. Pearce Bailey of New York is chairman, is authorized to secure the services of alienists and neurologists to be commissioned in the Officers' Reserve Corps, Medical Section, and to serve the neuro-psychiatric units which are to be attached to the base and other hospitals of the military services of the United States. Further information will be given and application forms sent to physicians qualified in this branch of medicine on application by letter or in person to the National Committee for Mental Hygiene, 50 Union Square, New York City.

DR. W. E. McCLANAHAN, health officer of the twelfth district of Baltimore county for the last eight years, has been commissioned a lieutenant in the Medical Reserve Corps.

ARRANGEMENTS are under way at St. Joseph's Hospital to form a well-equipped hospital unit for active service in the field. As soon as the plan of organization is complete the staff will volunteer as a whole for immediate service. Foremost in the plans of the organization are Drs. William Yeager, chief resident physician; James A. O'Donnell, Frank Martin, Johnson and George W. Bishop.

A CORPS of surgeons is to be selected by the Park Board for the treatment of employes injured in the service. The following were recommended by the district superintendents and are expected to be named by the board: Drs. Harry C. Algire, Charles S. Parker, W. Wm. G. Coppage, Jacob Fisher and L. Ridgely Wilson. A surgeon is to be assigned to each of the five districts and paid when called on to render professional service.

A JOINT meeting of the Carroll, Howard and Baltimore County Medical Societies was held at the Springfield State Hospital, Sykesville, May 24.

At the annual meeting of the General Alumni Association of the University of Maryland, held May 31, in Baltimore, Dr. Albert H. Carroll, Baltimore, was elected president. The medical alumni officers elected were: President, Dr. James M. H. Rowland, Baltimore; vice-president, Dr. William F. Lockwood, Baltimore; vice-president, Dr. Thomas H. Bray-

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shaw, Glenburnie; secretary and treasurer, Dr. Edward A. Leuper; recording secretary, Dr. George M. Settle, Baltimore, and corresponding secretary, Dr. Samuel J. Fort, Catonsville, Maryland.

THE annual meeting of the Maryland Society of Social Hygiene, co-operating with the Public Instruction Committee of the Medical and Chirurgical Faculty, was held in Osler Hall, Baltimore, May 29.

There were two sessions—one in the afternoon, at which Dr. Emil Novak, Baltimore, presided, and the evening session, when Judge Morris A. Soper presided.

Among the speakers were Dr. William C. Rucker, assistant surgeon-general, United States Public Health Service, the title of whose paper was "Social Hygiene Program for the Army and Navy During the War."

At a meeting of the medical profession held in Osler Hall, Baltimore, May 23, \$142,800 was subscribed for Liberty Loan bonds. Dr. Wm. S. Baer was the presiding officer.

DR. HOWARD A. KELLY has announced that through the generosity of Alfred I du Pont, Wilmington, Del., a considerable quantity of radium has been given to the Howard A. Kelly Hospital, Baltimore.

DR. JOHN D. BLAKE, Health Commissioner, has appointed Dr. William G. Clopton and Charles Norton as health wardens to substitute for Major Frederick H. Vinup and Captain Edmund A. Munoz, who have been called out as officers in the Fifth Maryland Regiment.

DR. WILLIAM GEORGE MCCALLUM of Columbia University has accepted the post as head of the department of pathology at the Johns Hopkins University to succeed Dr. William H. Welch, who has given up this work to accept the direction of the School of Hygiene and Public Health. Dr. McCallum will begin his work in Baltimore in the fall.

THE Johns Hopkins University held its forty-first commencement on June 12, when diplomas were awarded to 224 graduates, 80 of whom were in the medical school. Many of the graduates are already in active military service, and were unable to receive their diplomas in

person. Secretary of War Newton D. Baker, of the class of 1892, delivered the principal address.

In addition to the hospital unit already organized at the St. Joseph's Hospital, under the direction of Drs. Yaeger and Martin, another unit is being formed under the direction of Dr. Archibald Harrison of the hospital staff.

DR. DAVID I. MACHT, for some time assistant in medicine at the Johns Hopkins Hospital, has been appointed lecturer in pharmacology at the university.

DR. ANNA D. S. ABERCROMBIE, president of the Maryland Women's War Relief Hospital, has announced that ex-Governor Edwin Warfield has turned over his country estate in Howard county, near Ellicott City, as a rest home and recuperating center for nurses returning from the battle-fronts in Europe.

DEATHS

COURTNEY T. ALLEN, M.D., Dorchester, N. B.; College of Physicians and Surgeons, Baltimore, 1903; aged 38; died at his home, February 19, from cerebral hemorrhage.

HENRY PINCKNEY FROST, M.D., Boston; University of Maryland, Baltimore, 1889; aged 48; a Fellow of the American Medical Association and a member of the American Neurological Association and American Medico-Psychological Association; superintendent of the Boston State Hospital, Mattapan; formerly assistant superintendent at the Willard and Buffalo (N. Y.) State hospitals; died in the Boston State Hospital, May 23, from pneumonia.

ALVAH A. WARREN, M.D., Pawtucket, R. I.; Baltimore University School of Medicine, 1907; aged 43; a member of the Rhode Island Medical Society; died at his home, March 19, from pulmonary tuberculosis.

DOUGLASS HOWELL MORSE, M.D., Los Angeles; Johns Hopkins University, Baltimore, 1910; aged 31; a member of the Medical Society of the State of California; died in Los Angeles, May 8.

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FEDERAL RESPONSIBILITY IN THE SOLUTION OF THE HABIT-FORMING DRUG PROBLEM.

A PROPOSED GOVERNMENTAL SOLUTION OF THE HABIT-FORMING DRUG QUESTION, CONSIDERED IN ITS MEDICAL, PHARMACAL AND SOCIOLOGICAL PHASES, AND WITH REFERENCE TO ITS STATE, NATIONAL AND INTERNATIONAL ASPECTS, AND SHOWING THE INADEQUACY OF EXISTING LAWS ON THE SUBJECT.

By Charles B. Towns

No one can realize fully the enormity of what has come to be called "the drug question" who has not had special opportunities to study it. Only those who are conducting institutional work or who have been thrown into contact with the class known as "narcotics," "addicts," or "drug-takers" in hospitals, in reformatory or penal institutions and so on, or who may be engaged in special medical practice where such patients are treated, can form any true idea of the havoc caused by the unrestricted use of habit-forming drugs and the pitiable state to which these drugs reduce their victims.

Those who are responsible for the making of the laws on the subject have no special sources of original information and must, therefore, rely on the information of others, pending the receipt of authoritative findings from somebody authorized by themselves. But meanwhile certain facts may be stated relative to the matter, and these will place everyone in a better position to understand it.

First of all, it will help to this understanding to know that drug-takers are by no means all alike and that, taken as a whole, they fall into three broad but well-defined classes.

First, there are those who are dependent upon a drug because of some permanent underlying physical disability. They must

have the drug to alleviate the pain growing out of this disability. Patients of this type must continue to take the drug as long as they live.

For patients such as these it should be provided that, after proper legal identification, they might be able to get the needed drug in a regular, legal way, either through their own physician's prescription or by a prescription "franked" by Federal, State, or municipal authorities.

In either case, but particularly in the latter, unfortunates of this class should not be put to any unnecessary expense in securing their drug, as would be the case where they had to obtain their supply by irregular means forced upon them by the operation of an unwise law.

Secondly, there are the individuals who have acquired the drug habit through illness, in which the drug has been prescribed regularly by a physician; or where they have gone into drug stores and bought, openly and legally over the counters, preparations and "remedies" containing certain minimum quantities of such drugs. These patients first found out through a physician's prescription, or through the doctor's using a hypodermic syringe, what they were taking. Then they found a way to acquire the drug through some other than the regular channels, and thus finally they became confirmed drug-takers.

These people no longer have any pain or headache, nor is there any real reason why these people should continue to use the drug; but they cannot discontinue it without definite medical treatment, because the pain of deprivation and withdrawal makes such a course practically impossible. To cut these people off from their supply arbitrarily would be legislatively criminal; and to make them resort to subterfuge to get it is little less so.

Thirdly, and last, we have the underworld type of addict who has acquired the taking of the drug simply through dissipation. Drug-taking is a "social evil" only in this class, or practically so. It is a feature of drug-taking that one given to it is generally ready to set up the habit in another; and this is particularly true of the underworld type of addict. He—or she—loves company; and among certain classes the "social" aspect of the habit assumes the form of an orgy, such as a "cocaine party." This class, of course, knows nothing of laws whatsoever in getting its supply and will always be able to get it—at an extortionate price, certainly—until the "drug evil" is cut off at its source by international agreement operating through some form of world-wide standardized or co-operative international anti-habit-forming drug laws.

Now, considered generally, the present drug situation in this country is like this:

Here is an army of drug-takers in the United States; some of them legitimately and inevitably such because made such by their own or their physician's ignorance or necessity, or perhaps by a nurse's carelessness; some of them knowingly such; but prac-

tically the salvable majority of these unwilling victims—not the degenerate wrecks—are ready to quit their habit if they can do so without the inconceivable pain and suffering that mere “stop taking it” without definite medical treatment inevitably means. For the confirmed or debilitated old drug-takers such a course would mean permanent insanity or death where proper medical treatment and care had not been administered.

And yet, although confronted by this situation from the very beginning of the consideration of the present Federal law, no provision was made in the law for the treatment and care of these drug-takers, willing or unwilling, merely unfortunate or actually vicious. There is no identification of drug-takers and there is practically no limit to the authority of a physician in prescribing the drug for them. And confirmed drug-takers have been put in the same class with all other drug-takers, with no attempt whatsoever at classification.

The ruling of the Commissioner of Internal Revenue has necessarily made it possible for the physician to use his discretion in prescribing for such patients. A drug-taker—or anyone purporting to be a drug-taker—can at the present time have just as many physicians prescribing a narcotic for him as he may see fit to have; and he may demand just as much of the drug as he chooses to take. The doctor does not now have to find out whether or not the patient is a confirmed drug-taker; he can take the man's word for it and prescribe just what the patient asks for. A few such “patients” could practically corner almost the entire habit-forming-drug market and, if they wanted to do so, could establish themselves in the habit-forming-drug business! The “patient” could go to as many physicians as he chose to visit; and it would be “up to” the physician to write a prescription covering as long or as short a period as he might see fit to write one for any amount of the drug demanded. As the law and the ruling now stand, the physician may write a quantity for a day, a week or a year, and there can be no legal ground for criticism.

Nor is any provision made in the Harrison Narcotic Law for uniform prescription blanks, which means that patients submitting prescriptions for these drugs from such physicians can forge or rewrite the prescriptions without check. As there is at this time no law requiring the record or registering of physicians legally eligible to write prescriptions for habit-forming drugs, there is, outside of New York State, no verification of the prescriptions written for such drugs. Any druggist is legally justified in filling any prescription for them.

SAFEGUARDING THE PHYSICIAN'S PRESCRIPTION

This opens up one of the gravest abuses of legitimate prescribing for drug patients. It is needless for me to remind the authorities of the fact that there is no one living who is so resourceful as a drug-taker in devising ways and means to keep in hand a necessary supply of the drug. This condition can only be corrected by

a system of uniform prescription blanks, serially numbered, with compulsory registration on the part of the physicians in the State. All druggists should be supplied with all such registrations. Prescriptions calling for an excess of a certain minimum quantity should all be verified by the druggist before filling. This laxity can be overcome easily by recommendations such as are to be found further on in this statement. Also, under present conditions a physician may, if he likes, force the patient to come to him to have the drug administered as often as he feels like having him come, and this without the least legal justification for criticism! There is an immense profit in such "practice," for the "fees" are as a rule extortionate.

Under the present law the doctor in New York State may prescribe any quantity of an opiate or any other habit-forming drug to someone he has never seen and whom he has never personally examined on a simple statement in writing from the individual that he is a drug-taker and on his unverified answers to such questions as the physician may require. Venders of so-called "home treatments" are also permitted to sell a drug in any form or any quantity they may please to sell it. This "question and answer" farce may be carried on by letter through the mails, as well as by word of mouth in the doctor's office. So a regular "correspondence course" business in vending habit-forming drugs has grown up and venders of so-called "home treatments" are permitted to go just as far as they like. They have not been slow to grasp their opportunities, and a considerable business of this sort has sprung up and is now flourishing.

To the question: Why has this deplorable general condition arisen? there is just one basic answer; namely, that the general medical practitioner does not know which way to turn to meet the unfavorable conditions that have grown out of the lack of proper provision for the definite medical treatment of this type of patient. In most instances the physician is doing the best that he can; but in most instances the best that he can do is not the thing that is needed.

Some very harmful results have grown up out of the lack of consideration shown for drug-takers in passing the present legislation. Many worthy persons addicted to narcotic drugs found they were unable to get them through legitimate channels and thus have been forced to get their supply through other channels. And not only are they readily able to secure the drug in this illegal way, but, worse than that, the very circumstance of their having to get it illegally has brought them into contact with low, vicious, law-breaking people. So that, in many instances, there has set in a moral degeneration greater than had previously existed, along with the growing physical deterioration. Such an addict would "go the limit" to acquire his drug. He would be dominated by anyone who could keep him supplied with his drug, and he would take extraordinary care to conceal every source from which his

drug was coming and to protect anyone who kept him supplied with it.

This entire matter has been handled in a very impractical way. The practical results of the operation of the Harrison Narcotic Law have shown convincingly that the law-makers responsible for the act were not familiar with the psychology of the drug addict. Knowledge of the crooks and crosses of the drug-taker's abnormal mind and thorough familiarity with the twists and turns in the legal and illegal channels through which he gets his drug is the key to the situation.

HUGE GROWTH FROM SMALL BEGINNINGS

Those of us who are in a position to check up the habit-forming-drug situation from all sides know that not only are the present restrictions upon the traffic in drugs excessively lax, but that the present Federal law on this subject is wholly inadequate and falls far short of accomplishing the purposes for which it was intended. The law fails to enforce any accounting for the sale and use of the drugs under consideration, and it also fails to provide for dealing medically with those afflicted with the drug habit. Intelligent and conscientious prescribing and administering of habit-forming drugs under present conditions is practically impossible.

The writer was the author of the Boylan law of New York State, which preceded the Federal "Harrison Narcotic Law," and many of the desirable features embodied in the former law were incorporated in the latter. But the Boylan bill as originally drawn had to submit to some very unfortunate amendments to avoid losing the bill entirely, because neither the physician nor the druggist of the State at that time realized the necessity of such drastic narcotic legislation. But now it is found that the very features that were eliminated at that time from the original Boylan bill are absolutely imperative to overcome and avoid certain abuses possible under the present law. Practically all that is required to correct these abuses in the State of New York is to restore the Boylan act to its original condition and pass it.

The medical profession as a whole is far from realizing its full responsibility in this matter; nor do we expect the druggist, on account of the nature of his business, to realize fully or comprehend wholly his real position in connection with this drug evil. But the writer can fully appreciate and understand the position of both doctor and druggist because he not only has an intimate knowledge of the existing Federal legislation on this subject, but also because his experience with this question began in 1901, when there was no legislation whatsoever on small beginnings to their present gigantic proportions. There was little or no cocaine evil in those "early days." Heroin, which has come to be the biggest and worst drug curse of today, was created and developed since he began his work. Dealing daily with the sick of the addict class, requiring as a part of the history of every addict patient

how and why his or her habit was created and from what sources he or she has been getting the drug, the writer has gained full knowledge of the abnormal psychology of this habit-forming-drug situation and of the wide range of drug addiction in all its forms and phases, and can check up intelligently the present habit-forming-drug situation, both as to its causes and effects and in all its aspects.

The extent to which the manufacture, sale and use of many so-called "patients" and "proprietarys" are responsible for the growth of drug addiction is not well understood. Yet these preparations are all dispensed within the law. They are part of the regular stock in trade of every drug store and are sold in the regular course of business with perfect legal propriety. Case after case could be cited where the taking of opiates began with the taking of proprietary medicines, sold freely under the present law over the counters of drug stores without a physician's prescription. The patient went to a druggist and got something for diarrhea, headache, neuralgia, insomnia, a troublesome cough or rheumatic or gout trouble. The "something" that he got contained just enough of a narcotic to relieve the pain, and so the man or woman came back regularly for more. Thus the habit was established; for the findings of my work have conclusively shown that the drug habit is fixed, not by the quantity of the drug taken, but by the regularity with which a quantity, however small, is taken for a period long enough to establish tolerance and fix the "habit."

The spread of the cocaine habit grew principally out of the so-called "catarrh cures," which contained only from five to ten per cent. solutions of cocaine. "Old-timers" like myself in this work can recall the time when in some of the principal drug stores in New York City, even along Broadway, the windows were piled high with advertised preparations of this class. We can recall the time when, in Brooklyn, for instance, there were signs all over the city advertising "Dr. Cole's Catarrh Cure"—and, significantly, his trade-mark was an elephant! In all these cases it was only a short step from taking the drug in some such preparation to establishing the imperative need of the stimulation it afforded, and from that it was an easy step to taking it straight.

Heroin, a derivative from morphine—and its name is only a trade-mark; it could just as well be called "John Smith" or "Bill Johnson"—this preparation, like most of the alkaloids of opium, which number about 20 or more at the present time, was given to us by German chemists. It was announced as being a harmless morphine derivative. In other words, in heroin the highly depressing effects of morphine were eliminated, while the stimulating effect of morphine was retained. This means that heroin has about three times the actual narcotic strength of morphine. In other words, a patient accustomed to taking three grains of morphine daily can be made comfortable on a grain of heroin and will not suffer so much from the depressing effects incurred by taking

morphine straight. This is one of the reasons why the chemist, in putting this drug on the market, made the claim that it would not produce the harmful effects of morphine straight.

This drug, heroin, has now been on the market less than 18 years, but 12 years ago I gave to the medical profession the first clinical findings on this drug in comparison with morphine and other preparations of opium. I told the profession at that time that it was the most harmful form of opiate that could be taken and that, in view of its extreme stimulating effects, a tolerance for the drug would be established very much more quickly than in the use of an opiate in any other form.

As in the case of cocaine, heroin was first put on the market in the form of cough mixtures, and the chemist's representations as to its efficacy for coughs were endorsed by leading medical men both in Europe and America. Reprints of their articles on the subject were circulated broadcast. The spread of the heroin habit, like that of the cocaine habit, has largely evolved from preparations containing certain small minimum amounts of the drug. In these minimum quantities the drug was believed to be harmless and insufficient to establish a drug tolerance.

These preparations of heroin are being sold just as freely today as when first introduced. Many instances of habit due to using them can be cited; and I have now in mind a case due to the use of antikamnia and codeine, a preparation that is sold anywhere without a physician's prescription. And where these drugs are taken only in moderation over a certain length of time, even in the case of codeine, another German product of opium and one which has only one-eighth the strength of morphine, the taker is, in the end, just as sure to establish a drug tolerance as if he were taking morphine straight. It might be interesting for my readers to know that this latter drug, codeine, was discussed at considerable length at the last international conference at The Hague. The German delegates would not consent to have this drug classed as a habit-forming opiate, and the other delegates did not have sufficient knowledge of its habit-forming effect to combat any arguments which the German delegates made in its favor.

We find that confirmed drug habits have grown out of the taking of diarrhea mixtures containing certain small quantities of opiates that can be prescribed and sold by the druggist in any quantity. It is within the writer's trustworthy information that when the Harrison Narcotic Law went into effect a confirmed opium-taker in a Connecticut village, finding that she would have difficulty in getting her accustomed supply of her usual drug, went to her druggist in great distress. She learned from him that paregoric would produce the desired effect. She experimented with one bottle of paregoric, and finding it satisfactory for her needs—although she had to take large quantities of it—immediately purchased all the paregoric the druggist could sell her—no less than eight gallons!

Within the last few days I have had brought to my attention a

young man who became a confirmed bromo-seltzer addict through taking this preparation for occasional extreme headache. He bought it in large quantities and his physical, mental and moral condition showed the most marked deterioration. You could not imagine a more pitiful case of addiction than his. Not only is this preparation sold without the slightest question over the drug counters, but we find the manufacturer advertising it with enormous facsimiles of the bottle which it is ordinarily put up in. They stand as high as six feet, and the facsimile bottle is mounted on an automobile and displayed in the most conspicuous way up and down the public thoroughfares.

So we find that, as we begin to tighten the restrictions in the sale of certain drugs of this type, there is an increase in the taking of other drugs that sooner or later will have to be classed as harmful and habit-forming drugs. They are actually habit-forming drugs and ought now to be classed as such. The responsibility of prescribing and administering them should be placed squarely up to the medicology of the medical practitioner. I refer to all those drugs classed and known as "hypnotics," and sold for the purpose of inducing sleep, for quieting the nerves, stopping headaches and so on. No druggist has a moral right to dispense drugs of this class, except on a physician's prescription, any more than he has to sell morphine without one.

A basic way to deal with this question — to go at once and directly to the very root of the whole business—would be to restrict all use of opium to its crude form and to its forms as laudanum and paregoric. This would cut off all pecuniary interest in it, save for supplying it for legitimate medical needs in the crude form, and in its least harmful forms of laudanum and paregoric. Opium is produced only in a few countries—practically none in our own country—and it is only the manufacture of its alkaloids that require such large outlay of capital in laboratory equipment.

Where an opiate is indicated there are very few instances in which the required results could not be had from the administration of the crude product. Crude opium is the least harmful form of opium that can be taken, for it contains all of the alkaloids and may be taken either by the mouth or in suppositories. If the traffic in and sale of this drug was reduced to traffic and sale of crude opium it would not inconvenience the medical profession in its legitimate use of the drug in any way whatsoever and it would immediately stop this large illicit traffic that has grown out of the habit-forming-drug situation.

No possible good will come out of attempting merely to forbid the importation, manufacture or sale of heroin. The chemists are very clever; and they would give us in another day some preparation of opium under some other trade name. And if it was not an actual preparation of opium they would claim that it was a synthetic one. The only way to meet such a habit-forming drug condition is, I repeat, to restrict the manufacture, sale, prescribing and administering of opiates to the crude opium, to

laudanum, and to paregoric, and then to hold the physician to a strict accounting of all of these he personally prescribes or administers. There are no physical conditions in which heroin, or any other narcotic, is indicated but what could be met by these. We can dispense even with morphine and all of the opium alkaloids. I can go back to the time in the South when there was an old rosewood medicine chest with a ball of opium and a vial of paregoric, and these easily met every possible need where opiates were considered necessary to alleviate pain. The medical profession would not be inconvenienced in the slightest degree by such a restriction and it would at once eliminate every unfavorable hazard that has grown out of the use of habit-forming drugs for medical purposes.

MENACE OF THE HYPODERMIC SYRINGE

The hypodermic syringe is indispensable to the physician. It is distinctively a physician's instrument. But it is used too freely by the medical profession in the administration of opiates. Doctors do not fully realize that it is not safe for anyone who has pain to know what is easing his pain. There are very few cases in which an opiate is indicated where it is necessary to resort to the use of the hypodermic for its administration. Where an opiate must be given it should be disguised in every possible and in any conceivable way. Disguise can be practised by giving the drug by the mouth or by the use of suppositories. For the hypodermic syringe is the one thing that tells a man with a pain what has been given him to ease his pain. The man feels that this instrument is a necessary part both of the equipment and the process necessary to alleviate pain. So the knowledge of what eases pain, induces sleep and lessens discomfort is one of the principal promoters of the use of habit-forming drugs. This little instrument is a tell-tale; and the man whose suffering has been relieved by it in the hand of another is going to get one into his own hands and relieve his pain himself if the pain keeps up. He has learned what it is, what it does and how to use it from his doctor!

The medical nurse usually owns a hypodermic layout. But it is a great mistake on the part of the medical profession to believe that she should own one or be authorized to use one except under medical direction. There are two very important reasons for this.

First, for the nurse's own protection. It isn't safe for anyone to have constantly at command this way and means of administering opiates. Knowing how these opiates act, there is scarcely anyone who has free access to them but would at some time or another resort to their use to relieve some acute condition. And he—or she—might at the same time experience a very pleasurable sensation as well! But the "shot" may temporarily cover up some condition that ought to be eliminated, but that, under the neglect arising from use of the drug, may develop seriously. One of the reasons why some physicians and nurses have become drug-

takers is that they have free and practically unlimited access to opiates and other habit-forming drugs and the almost constant suggestion of the syringe to use them—with no one to say them nay. Not one of these victims ever started out to be a confirmed drug-taker—a “dopefiend.” They all took it to tide them over a season of hard work or for some reason growing out of the hard conditions of their callings and were confirmed in the habit before they knew it—invariably to their great chagrin, dismay and horror.

The second grave evil connected with the nurse having a hypodermic layout is that she is, unfortunately, nearly always in the employ of the patient and seldom, if ever, in that of the doctor. A nurse should be given every possible liberty in the sickroom, every possible advantage of personal freedom and professional discretion. Imagine, now, the pressure that is brought by the patient to bear upon the nurse to use an opiate at certain times when the patient knows the nurse has it in her possession and knows that she does not necessarily have to account to anyone for a single particle of it!

Remember, too, that patients such as these frequently disregard their physicians and send for the nurse instead of the doctor when they have some pain or illness that they think a nurse can cope with, knowing that the nurse has in her possession drugs that will alleviate pain! In my experience, covering many years in the conduct of a hospital institution, I have employed many nurses. I have found very few who were not honest. But we have found some who were dishonest and would use such drugs irresponsibly. The only safe thing to do is to keep opiates and hypodermic syringes out of every nurse's hands except under medical direction and legal accountability.

The sale of hypodermic syringes and hypodermic needles should be restricted to purchase by a physician's prescription. Outside of New York State these can be bought in any drug store and in most department stores as easily as a package of chewing-gum or as a pocket-knife can be bought. The physician should in every case where it is required supply the nurse with a hypodermic. But he should leave in her possession only the actual dosage of drugs which she is to administer; and every dose should be strictly accounted for. Such a course would be a protection to the nurse and a protection to the patient, and it would eliminate one of the big contributing causes to the promotion of the habit-forming-drug evil. This would be the case especially in acute illness and in injury, in each of which the use of opiates is most important and to the use of which in this connection consideration must be given.

NECESSITY OF MEDICAL INFORMATION

The medical phase of this habit-forming-drug situation is the most intricate problem connected with the whole subject. I realized early in my work for corrective drug legislation that to

insist upon an accounting by the medical practitioner for such drugs as he prescribed or administered would do much good, because it would constantly remind the physician of his professional responsibility in this matter. It is unfortunate that the medical profession as a whole has never realized the hazard incurred in prescribing and administering these drugs, of the danger of creating a drug habit unnecessarily every time an opiate is used.

This cannot, however, be charged up to the profession as anything but the result of an absolute lack of knowledge of how easy it is to establish a drug tolerance, for it is certain that the medical profession of this country is not consciously careless or criminally indifferent to the effects of unrestricted and indiscriminate drug administration.

Until my medical findings were demonstrated there was no established medical precedent to go by in considering this phase of the "drug evil." Consequently it was impossible to draw any intelligent deductions as to dealing with this problem. Physicians did not realize, because they did not know, the possible danger mark in prescribing or administering such drugs; and not until it was proposed in the New York State law that no physician should be permitted to prescribe or administer these drugs for a period longer than three weeks without a consultation, either with some other practitioner or with a local board of health, did they realize the danger of establishing a condition that they would be unable to cope with later. Because of the abuse which has been heaped upon the profession in this matter I hope physicians will accept even the most drastic rules and regulations on this subject. I am sure that if I were a practitioner I would welcome such restrictions and conditions—particularly at the present time, considering the enormous harm that has grown out of the use of such drugs.

Our own country and the whole world would be better off without such drugs. It would be better for people to suffer untold agonies temporarily than to become afflicted with the drug habit. Those who must have the drug to alleviate the pain caused by permanent illness or injury—who must practically live on it—would be in the end much better off dead than to live and suffer—than to live and experience the harmful conditions that grow out of the constant use of opiates. In the end their relatives, friends and others would rather such people were dead than to have to deal with them as drug addicts. Considering the few human beings who are now taking the drug for the last reason stated, and considering the great army of drug victims the illicit traffic in such drugs has created, it is a fair question whether the alleviation of pain for the few is worth the awful price paid for it by the curse to the many. My findings have shown that not more than 10 per cent. of those afflicted with the drug habit are entitled to use it continuously because of physical disability. This means that we are sacrificing 90 per cent. of those who could be well and

normal without the drug to alleviate the suffering of some few incurable persons.

The moral degeneracy, mental impairment and physical deterioration brought about by the unnecessary use of these drugs make it impossible to calculate the harm and injury that have grown out of the illicit traffic in them. This traffic is filling our prisons, our insane asylums, our madhouses and our houses of correction, taxing them to their limits with grown men and women, and, saddest of all, with young boys and young women who have drifted into the lowest strata of life from the use of such drugs, none of these people knowing in the beginning what it all meant in the end. I feel that there is no one who knows all the facts surrounding this problem but must be absolutely willing to surrender every interest, whether pecuniary or professional, necessary to end the evil once and for all. And yet the great drug mill grinds ceaselessly on, remorselessly taking its toll in ever and ever greater numbers of men and women, young and old; whose fate is an indictment against the society that permits it.

What is needed to correct this situation is, first, to create conditions that will avert any unnecessary crop of drug-users, pending the pushing of this work to the international agreement which is the logical conclusion. There are two things we can do now. One of these is to restrict the medical practitioner in prescribing and administering these drugs. The other is to impose the heaviest penalty possible upon illicit drug traffic. The man who knowingly creates a drug habit should be put in the same class with the murderer or worse. Twenty years at hard labor should be the minimum penalty. I would like personally to see the same treatment meted out to such cold-blooded beings in the United States as would be meted out to them in China: make the punishment capital! A few heads would put an end to this damnable business—and the heads would be heads we could easily do without.

As this problem of provision for those afflicted with the habit is the greatest single problem to be considered in disposing of this matter, I suggest that the Federal Government, through whatever clinical means it may deem necessary, establish some method of medical and social dealing with the drug-takers and that it publish these clinical findings in comprehensive detail; that the Government establish as a class of drug-takers those who are in need of remedial treatment for drug habit, but who have no means to pay for definite medical treatment; that they go as far as they can towards helping such patients and also that they bring pressure to bear upon the State authorities to assume responsibility for the treatment of drug cases; that in the case of the confirmed drug-taker who must have the drug for the reason of some permanent condition demanding its use, the Government see that this individual is legally identified and then see that he is "franked"—i. e., provided free of expense—with a prescription for the amount of drugs he should properly have.

But no greater mistake could be made than to bring about further restrictive legislation on this subject until proper provision had been made for the treatment and care of those afflicted with the drug habit. It makes no difference whether those so afflicted came from the lowest and humblest walks of life, from the top-most strata of society or from the blackest depths of the underworld, they must be helped out of the depths of this degrading evil and not thrust deeper into the pit. All must know and understand that once a tolerance for a particular drug has been established there is brought about in the organism a definite physiological change that makes it practically impossible for a person to be deprived of that drug. Nothing short of scientific surveillance, definite medical treatment and intelligent medical care is going to free one from the drug habit.

I cannot possibly present too strongly in this connection one of the gravest hazards that grows out of the neglect of the confirmed drug-taker. If the confirmed drug-taker does not get proper medical treatment, if he is not eligible for the "franked" class of drug-taker, and yet cannot get the drug in a legitimate way he is going to get it otherwise. If he cannot get it, his next and only possible means of escape is to take up the use of alcoholic stimulants. This merely makes matters worse. Anyone who has not had the opportunity to study the drug patient who has gone to alcohol as a substitute for drugs or for relief from their effects cannot appreciate the horror of such a condition. Every one of such alcoholics must be continuously under the extreme influence of alcohol, and you thus have got a miserable, irresponsible, drunken wretch to deal with. No more horrible physical or mental condition can be imagined. These patients quickly become a liability to the medical institutions; for the lack of proper treatment and care of this type of patient is one of the greatest contributing causes to the increase in the army of the insane. On the other hand, if such patient were definitely treated medically for his drug habit, you could in most cases eliminate the possibility of this worse hazard I have pointed out.

Undoubtedly there is going to be much for the States and municipalities to do in connection with this matter, for the Federal Government in this undertaking is limited in many respects. Nevertheless, I hope that the proposition to have the Government investigate this entire subject from beginning to end will go through and that the investigating body will be able to make such recommendations to the State and municipal authorities as may be necessary to complete in every way the efforts of the Federal authorities and so arrive at uniform results throughout the country. A committee of able men, appointed by the President, with an adequate appropriation to enable them to conduct hearings and make investigations and empowered to go to the bottom of this situation, national, State and international, take off the roof and open up the whole business to the blue sky—such a committee could do wonders. Its findings would be unquestioned, its conclu-

sions would be authoritative. The States would then enact proper correlative and inter-acting legislation and the drug situation would be securely in hand.

NEED OF AUTHORITATIVE INTERLEGISLATION

That this whole problem is a Government affair I found from several years' experience in the State legislatures and from discussion of the subject with boards of health. It would be impossible to establish uniform State legislation on this subject and get the proper co-operation of the various authorities, leaving it to the individual States to establish the needed measures. But if Congress can assure a free and thorough investigation of the problem and, as a result of its published findings, enact comprehensive model legislation, the States could then either reenact this legislation or perhaps clothe their State health boards with summary powers to co-operate with the Federal authorities. From its every angle the handling of this matter seems to me to be a Government proposition.

I have also shown in my presentation of this subject to various bodies and authorities that it is not merely a national problem, but an international one, and that the existing laws do not account as they should for all narcotic drugs imported into and manufactured and distributed in this country. This phase of the matter I believe to be most important, and I believe it to be the essential, ultimate and fundamental basis for the solution of the question. I believe my ideas as to the necessity of international agreement in cutting off this evil at its source are reasonable and practicable. And I would certainly include under the terms of an international agreement all that class of drugs known as "hypnotics" taken indiscriminately to relieve pain and induce sleep. For I have been able to show that these drugs are in their measure harmful and habit-forming. They should certainly be included in our own Federal legislation as proscribed drugs and should be likewise included in the international agreement that must be our ultimate means of handling this whole habit-forming-drug question.

It is well worth repeating that the ultimate and successful solution of this unlimited problem is an international agreement which will control the evil at its source. No real progress can be made in meeting this habit-forming-drug situation until we can control the source of supply. We have got to begin at the beginning in this matter, and not start out after the drugs have been manufactured. The most drastic laws which this country could possibly enact would not at this time eliminate the illicit traffic in habit-forming drugs. They would be sold and trafficked in just as freely after the laws were enacted as they are now. So this whole matter evolves itself into being not merely our individual national problem, but a world problem.

The countries that produce such drugs must agree to permit the sale of such drugs only under a certain international understanding and under conditions internationally agreed upon. Then there

might be an agreement among the participating governments that there should be a strict accounting of all opium and other narcotics imported, manufactured and dispensed within the jurisdiction of each government. It should be made impossible for the non-producing countries, which are only consumers, to traffic in the proscribed drugs. Traffic in them should be restricted to their respective individual national areas. It should be possible for them to buy, manufacture and dispense such drugs for their own home consumption only. Pressure should be brought to bear, where possible, to make the merchandising of narcotic drugs a Government monopoly the world over. We would have to establish in this country a new government precedent to accomplish this; but if it is constitutional to do this it would be in the end advisable. Another course might be pursued if that plan were not feasible; but the plan outlined above would seem to be a practical way of handling the matter.

INTERNATIONAL CONTROL ESSENTIAL.

One reason why the countries which do not produce these drugs should restrict the manufacture and sale of them to the quantities needed for their own home use is that horrible abuses are growing out of the commercializing of narcotics. I cite two or three cases to illustrate this.

The Federal Government has recently uncovered in New York City a firm who set themselves up as being wholesale druggists. They were able to do this by paying the Government the annual tax of ten dollars! They import quantities of opiates which they cannot sell legally in the United States except upon written order blanks which are supplied by the Government. This same firm, however, exports large quantities of these drugs into Mexico to an individual or a concern. There is no law in that country which affects the sale of such drugs in any way whatsoever. This Mexican concern can smuggle these goods back into this country without any trouble at all; and this is just what they do. Here is one unmistakable big loophole, and every revenue officer knows it and is trying to close the hole, but finds it a hard job.

Then our revenue officers find on a Japanese ship in San Francisco harbor some three hundred thousand dollars' worth of opiates, which they attempt to seize. But they are immediately advised that it is a shipment destined to Vera Cruz; and you can see what becomes of it after it reaches Vera Cruz! The illicit traffic in such drugs has not only put an enormous premium upon the price of such drugs to the illegitimate user of them, but it has in the past ten years quadrupled the cost of such drugs for legitimate medical needs. If commerce in these drugs were made a Government monopoly it would immediately eliminate every unfavorable factor connected with this habit-forming-drug situation as far as traffic in habit-forming drugs was concerned. It would exact an accurate accounting of their sale and use, and, most important of all, the Government could fix the price and limit the

profit on such products. To do this would mean the practical wiping out of the illicit-drug traffic, for nothing now keeps it alive but the enormous profits to be made in it. No profit, no "dope."

I think it well to bring out here the ease with which illicit traffic in habit-forming drugs can be carried on through sales considered legitimate by the wholesale and retail druggist. These dealers cannot sell such drugs in our own country except on a certain form of order blank provided by our Government, but any drug dealer in this country would be perfectly justified in filling an order for any quantity of these drugs from anyone communicating with him on a letterhead professing to be either a druggist or a physician in any other country. They need not be either. If exchange on New York or a postal money order accompanied their order, the druggist would fill the order without question. You can see that illicit traffickers, or anyone else outside the United States, could buy all they want and are able to pay for from our New York or any other dealers. The manufacturers of such drugs in this country do not have to account for what they import or manufacture. Yet many wonder why and how, when the illicit traffickers in these drugs are apprehended, they have such drugs in their possession, and why the drugs invariably bear the name of some one of our well-known drug manufacturers. No blame can at this time be laid upon the druggist in this matter, for the druggist is just as human as anybody else, and he is going to sell the drug to anyone who has the price, so long as he does not break any laws. This means that the people should make up their minds that they cannot leave it to dealers and manufacturers to bring about the necessary restrictions to protect the public.

Even though, in trying to avoid the illicit traffic in these drugs, we are able to secure the co-operation of the countries immediately surrounding and adjacent to us, the lawless drug seller would be little inconvenienced. While this country took the initiative in bringing about three international conferences on this opium question (one, the first, being held in Shanghai, the other two at The Hague, in 1912 and 1913, respectively), practically no good came out of these conferences to this country, so far as this habit-forming drug problem was concerned. For one thing we could not go into these conferences with clean hands. Nor did the countries now at war at that time feel that these drugs were any immediate problem to them. The conditions which have grown out of the war, however—and I have been in a position to ascertain the facts—have made this habit-forming drug problem a world problem; and all these nations that previous to the war treated this habit-forming drug problem only as an incident will have to take it up after the war from an entirely different standpoint.

As soon as the war is over the time will be right and ripe for us to bring about the necessary international understanding on this subject with all the prime powers of the world. True, we cannot hope to solve the problem successfully at home until we

have been able to get an international understanding; but in the meantime we must do the next best thing. We must take up the domestic side of this problem, starting with the importer, manufacturer, wholesaler and retailer, and without fear or favor must take such means and must enact such measures as will restrict the consumption of all these drugs to legitimate medical needs.

REGULATION BY TAX AND REGISTRATION.

The Commissioner's first amendment provides for a tax on these drugs, to be collected as a stamp tax. It seems to me that, as I have said, and now say again, the ideal process for controlling this drug problem would be to make the whole business of handling the drug a Government monopoly. But, as before intimated in this article, if for any reason this country or any other country found it impracticable to make the business of handling these drugs a Government monopoly, the next best step would be for such Government or Governments to put all habit-forming drugs shipped into their ports on a par with spirits and tobacco, and insist upon the same legitimate accounting for every particle of these drugs as is insisted upon in the case of these two articles. The importer would have to account for every unit of weight he sold, be it pound, ounce or grain, according to whether he were importer, wholesaler or retailer. This could be done by a system of stamps the same as in the case of tobacco, and also by recording the name of the buyer. The manufacturer would have to account for every particle of such drugs manufactured, and the wholesaler and retailer would have to account for every ounce sold or dispensed.

Now, there need be no more bookkeeping attached to the keeping track of this opium and such conditions of import, manufacture, sale and use than there is in keeping track of spirits or tobacco. The only additional clerical work would be that of registering the names of the several buyers as the transactions progressed towards the ultimate consumer. If the administration of the drugs under discussion is restricted as is proposed, and as the need of such restriction is shown in this article, instead of necessitating increased office force, clerk hire and records, it would mean that the reduced sale and consumption of the drug will require less space allotted to handling these drugs, fewer clerks to handle them and fewer records to make. In the end this phase of the problem will be no problem at all to anyone concerned. It is safe to say that when the habit-forming-drug situation is finally cleared up, when the needless use of such drugs has been eliminated, not more than ten per cent. of the present amount of opium and opium derivatives now annually imported will be necessary for legitimate medical needs.

The number of importers for such drugs should be limited and a sufficient bond should be imposed as a guarantee of good faith in those engaged in the narcotic-drug importing business. The United States Government may or may not have the right to insist

that no such drugs may be exported from this country, and it may or may not have the right to fix a price upon such drugs. But something effective must be done along the line of restrictive regulation. The details for the carrying on of this business on the basis indicated would be very easy to arrange. A system of uniform triplicate order blanks and inventory blanks, serially numbered, could be established, which would keep the Government daily advised as to the possession and sale of all such drugs and of all orders for such drugs. A copy of every sale order would have to be sent to the proper Government officer. The same with the inventory—a copy would have to be sent. And it would be an easy matter to check the buyer's order against the inventory and thus be able to follow every sale through to destination and secure an accounting of stocks on hand as well as of quantities sold.

This whole subject is so far-reaching, involves so much detail and affect so many and such varied interests, that it would be impossible at this time to introduce in Congress legislation that would meet this situation as it should be met. Before any legislation is proposed the whole subject should be investigated by the Federal Government and its findings made public and studied as a preliminary to the enactment of any law or amendment to the present law. With the united wisdom of Congress applied to the matter, there can be no doubt that such an investigation as is proposed would lay the foundation for Federal legislation that would once and for all solve this monstrous problem.

As a conclusion of this whole matter I renew my suggestion that Congress empower the President to appoint a committee of able men to investigate this whole subject in all its phases, making such appropriation for this purpose as in the wisdom of Congress may be necessary. Such action of Congress would mean not only a solution of this subject as far as the Federal Government is concerned; it would mean also a solution for the States. And it would establish a legislative, medical and sociological precedent that would give this country for the first time the primacy it ought to have in asking other countries to join with us once and for all in terminating this evil—an evil which has now become not merely a series of isolated national problems, but a united world problem.

Book Reviews.

INTERNATIONAL CLINICS. A Quarterly of illustrated Clinical Lectures and especially prepared original articles. Volume IV. Twenty-sixth Series. 1916. Philadelphia and London: J. B. Lippincott Company. Price, \$2.

Time fails us to dwell on the large number of articles of value here presented, as they deserve to be noted. There is a very striking clinical lecture on migraine, presenting many new personal observations. The paper on insomnia seems to treat the

subject rather lightly, unless Dr. Walsh has really hit upon a new explanation of it, which is barely possible. The protest in the article on diagnosis in pulmonary tuberculosis will surely awaken a response in the minds of many readers, who feel that false diagnoses have certainly been made in some of their cases by men accredited as experts. He claims large personal experience in this disease, and quotes the reports of nine tubercular sanitariums where post-mortems showed over 10 per cent. of inmates not tubercular at all. This attitude of tubercular specialists is an extreme opposite to the easy-going explaining away of plain tubercular symptoms which prevailed a generation ago.

There is a striking article on granular ulceration of the genitalia, of which it is said only one other report exists. There is a very bold article on sacro-iliac backaches, from a surgical and x-ray standpoint.

The x-ray comes out very strongly in this volume, for there is an article of great interest by Dr. Miner of Asheville on the x-ray in pulmonary tuberculosis, in which he corroborates the conclusions of Dr. Baetjer, although approaching the subject from quite another standpoint and preferring for diagnostic uses the fluoroscope, which he thinks more simple, inexpensive and handy, and within the sphere of the lung specialist as an office equipment.

CEREBELLA ABSCESS. ITS ETIOLOGY, PATHOLOGY, DIAGNOSIS AND TREATMENT. INCLUDING ANATOMY AND PHYSIOLOGY OF THE CEREBELLUM. By Isidore Friesner, M.D., Adjunct Professor of Otolaryngology and Assistant Aural Surgeon, Manhattan Eye, Ear and Throat Hospital and Post-Graduate Medical School, New York, and Alfred Braun, M.D., F.A.C.S., Assistant Aural Surgeon, Manhattan Eye, Ear and Throat Hospital, Adjunct Professor of Laryngology, New York Polyclinic, Adjunct Otolaryngologist, Mt. Sinai Hospital. With ten full-page plates and sixteen illustrations in text. Cloth, \$2.50 net. 1916. New York: Paul B. Hoeber.

Only within recent years has cerebellar abscess attracted the attention of the profession to any great extent, but with advance in the knowledge of otitic diseases came a like advance in our knowledge concerning cerebellar abscess. Though 98 per cent. of cerebellar abscesses are of otitic origin and are therefore encountered most frequently by the otologist, still they occur sufficiently frequently in the practice of the general practitioner and the general surgeon to justify a more intimate knowledge by these folks as well as the otologists of the symptoms, diagnosis and treatment of cerebellar abscess. The above-mentioned book, written from first-hand knowledge of cerebellar abscess by men of experience, supplies not only the general knowledge needed of this affection, but also the special so necessary to the specialist. It enters into the most recent advances of cerebellar physiology, methods of diagnosis and the relationship between the cerebellum

and the static labyrinth. It outlines briefly but succinctly the anatomy and physiology necessary for a proper neurological comprehension of cerebellar disease and with which the neurological surgeon must be equipped to understand intelligently the fundamentals upon which cerebellar diagnosis is based. It will therefore be found a most useful book to those desirous of the latest knowledge concerning cerebellar diagnosis, especially as it is applied to the detection of cerebellar abscess.

TEXTBOOK OF SURGICAL OPERATIONS, ILLUSTRATED BY CLINICAL OBSERVATIONS, FOR PHYSICIANS AND STUDENTS. By Prof. Fedor Krause, Privy Medical Councillor, Directing Physician Augusta Hospital, Berlin, in association with Emil Heymann, M.D., Chief Physician, Augusta Hospital. Translated into English by Albert Ehrenfried, M.D., F.A.C.S., Assistant Visiting Surgeon, Boston City Hospital. In six volumes. Volume II. With 373 illustrations in two or more colors. New York: Rebman Company. Price \$7.

This large and beautifully gotten-up volume is devoted to the head and its contents. It begins with a chapter of seventy pages on operations on the lower jaw. Others follow devoted to the mouth and tongue; the pharynx; the salivary glands, twenty-three pages; the facial and cervical nerves, with some very interesting successes along the line of anastomoses; and, most interesting and instructive of all, about two hundred and fifty pages on brain surgery. Perhaps the most fascinating portion of this section is that on the endeavor to cure epilepsy by excision of the focus of irritation; or possibly the endeavor after removal of the hypophysis, being a newer line of adventure, may be of greater interest to some. Some remarkable cures are recorded under each heading. There is a very striking case of hydrocephalus in a boy of six years, where a silver cannula was left as a drain from the lateral ventricle into the subcutaneous tissue above and back of the ear. After six weeks the child left, in good condition, with diminished circumference of the skull. Some four years later the parents reported the little boy much better and development of the mental faculties progressing nicely, but positively refused to let the buried cannula be removed.

HANDBOOK OF SUGGESTIVE THERAPEUTICS, APPLIED HYPNOTISM, PSYCHIC SCIENCE. A manual of practical psychotherapy, designed especially for the practitioner of medicine, surgery and dentistry. By Henry S. Monro, M.D., Omaha, Neb. Fourth edition, revised and enlarged. St. Louis: C. V. Mosby Company. 1917. Price, \$5.

The reviewer is one who likes to give every man the credit for any accomplishment at all, and to apologize, as it were, for any criticism he may be compelled to make. He prefers that a writer should say what he has to say and cease talking; yet he knows

that on that principle all after-dinner speakers and not a few authors would have to remain silent, and then how could we fill the silences.

The reviewer has studied hypnotism under its various trade names rather carefully, and has applied it, and dislikes it by any name. He read some of Freud's writings with pleasure and profit, but decided that in his sexual theories he had lost his judgment, as so many students of the sexual have done. Now, apparently, Freud is a fallen idol. The present author speaks of the "fascinating mirage set forth by Freud." Those who are familiar with the sexual probings to which young women are subjected by certain apostles of psychoanalysis, and to which they have to submit because the professor has power to declare obstinate patients insane, would think our author very gentle in his estimate. To rouse a young woman out of her bed at night and investigate her for sexual dreams is hardly an American method of cure. In that we agree with the author.

After 166 pages of talk about "practical theoretical considerations," etc., our author gives some illustrative cases. Case 10 was a negro girl of thirty who had "a decidedly retroflexed and retroverted uterus, bound down by adhesions, with heat, pain and tenderness, and her general temperature 100.5 degrees F." He tried to lift the uterus, and put in a Hodge-Smith pessary. He forgot to go to see her afterwards, and a year later found the pessary transversely across the vagina, and the vagina in a most insanitary condition. He ascribes her endurance of his treatment to a hypnotic talk he had given her. We would rather ascribe it to the saint who protects negro women from this kind of specialists, if we only knew her name.

The author says that the Johns Hopkins Hospital Bulletin complimented and commended his book. Even the most careful reviewers are caught napping occasionally!

A TEXTBOOK ON THE PRACTICE OF GYNECOLOGY, FOR PRACTITIONERS AND STUDENTS. By William Easterly Ashton, M.D., LL.D., Professor of Gynecology in the Graduate School of Medicine of the University of Pennsylvania. With ten hundred and fifty-two new line drawings illustrating the text, by John V. Altender. Sixth edition, thoroughly revised. Philadelphia and London: W. B. Saunders Company. 1916. Price \$6.50.

This work was originally planned in the belief that, while there were many excellent presentations of this specialty by specialists of note accessible to the practitioner, there was room for one more, written on the principle that the practitioner would prefer one which viewed the subject from the standpoint of the needs of one who was not very expert in gynecology and who would like to have even the most trivial details explained clearly to him.

The author has therefore taken nothing for granted in his de-

scriptions, but has in each case not only stated what should be done, but made his directions and illustrations so explicit that they may be intelligently and easily followed. He has likewise in each case first stated what he believes from experience to be the best treatment, and afterwards discussed other methods of good repute.

The hundreds of illustrations were all made for this work, either new or adapted so as to show the points desired. Each operation is prefaced by a cut showing all the instruments, needles and suture materials to be used in it, so that the operator can tell at a glance whether he has everything in his satchel.

In bringing the present edition up to date the author has re-written some chapters and considerably changed others. He has made a book which we can highly recommend.

THE SURGICAL CLINICS OF CHICAGO. April, 1917. Volume I, No. 2. With 99 Illustrations. Published Bi-Monthly. W. B. Saunders Company, Philadelphia and London. Price \$10 a Year.

We find this issue an extremely attractive one. Particularly interesting are the remarks of Dr. Ochsner in regard to the harm done by the manipulative examinations of cancer of the breast; of Dr. Andrews on the cosmetic and healing value of minutely exact apposition of the two sides and the corresponding depths of wounds, with the cut blood vessels as guides; the protests of Dr. Bevan against Lane's colon operations for constipation; the advocacy by Dr. Harris of nerve-blocking for laryngectomy; the clever operation done by Dr. Kanaval for the extraction of a bullet from the top of the atlas, and, finally, Dr. Dyas' presentation of the open treatment of infected wounds, so much used in the hospitals of the world war. His reports of success with extensive burns should be read by every physician, as these cases may occur at any moment, and have had the most unfortunate issue in so many instances.

TRAUMATIC SURGERY. By John J. Moorhead, M.D., Adjunct Professor of Surgery, New York Post-Graduate Medical School and Hospital. Chief Surgeon, Interborough Rapid Transit and New York Railways. With 522 Original Illustrations. Philadelphia and London: W. B. Saunders Company. 1917. Price \$6.50.

This attractive volume is offered as containing the experience and therapeutic suggestions of a surgeon of large practice in accident cases, who places in one convenient volume the best he knows for the guidance of those who may be called to the same sort of work. As the task of the accident surgeon is in many respects different from the leisurely duties of those who operate on their patients by previous appointment, and very trying to even experienced surgeons at the outset, such books have their special value.

The author thinks that the class of cases under consideration

has not received as exact attention as "appointment" cases. His style is condensed, and suited to the perusal of a man who has his general surgical principles well mastered.

The author believes in open air and sunshine for wounds. He states that skin-grafting has not been necessary in his practice since these healing elements have been called to the aid of his patients.

The illustrations seem to us particularly apposite and informing as to the treatment of the cases to which they apply. This is perhaps because the author made each for this purpose.

Although the work has mainly to do with surgery, such emergencies as damage from caissons, from illuminating gas, from drowning, and instructions as to medico-legal testimony, and as to tests of sight and hearing are included in the text.

TRANSACTIONS OF THE SECTION ON GENITO-URINARY DISEASES OF
THE AMERICAN MEDICAL ASSOCIATION. 1916. American
Medical Association Press, Chicago.

This little volume is replete with first-class information on the very latest methods and clinical results in this specialty. We need refer only to the articles on "Sterility;" "Physiochemistry of the Gonococcus in Relation to Immunity and Therapeutics;" "The Hecht-Weinberg-Gradwohl Test in the Diagnosis of Syphilis;" "Pyelitis in Children;" "Frequency of Urination in Women;" "The Transplantation of Fat in Prostatic and Kidney Surgery;" "The Use of Thorium in Pyelography," and the three articles on the various aspects of "Seminal Vesicle Disease."

The discussions on these papers are all of the most intense interest to the progressive practitioner, even if not a specialist.

In his paper on the physiochemistry of the gonococcus, Dr. Warden inclines to the belief that the doctrine of antibodies must give way to a doctrine of unfavorable environment, in which the tissues become, as the result of the introduction of exciting foreign bodies or otherwise, unfavorable to the life and growth of the infecting germ. The conditions permitting the life of the gonococcus in the tissues are so extremely delicate that almost anything in the way of change may check its activities. He has brought forth an antigen composed of the gonococcus fats dissolved in alcohol, which he considers of great value, supposing that it may act by increasing the amount of these fats in the tissues and so causing the gonococcus to burst by excessive absorption of water. He thinks that the whole theory of antibodies will give way to a doctrine that the curative agency is not a substance, but a condition of the body fluids. He thinks that by studying the body fluids and tissues more carefully we may learn to shift the balance of the surface tension so as to destroy the gonococci in the cells and tissues. This will not make the body foolproof, nor kill the gonococci on the surface of the mucous membranes; only those in the interior.

MARYLAND MEDICAL JOURNAL

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BALTIMORE, AUGUST, 1917

DOCTORS AND THE WAR.

THIS is the season of the year at which physicians are usually arranging to take their vacations, but this year more serious matters are claiming our attention. This country is now at war with a most powerful as well as most brutal nation, and our thoughts are engrossed with warlike matters. Our Government is calling loudly for physicians to volunteer for service. Already many have answered the call, and still more are demanded. The Regular Army and the National Guard are now near their war strength, and the new army is being organized. This means at least one million men under arms and the imperative need of at least twelve thousand physicians at once. Besides these the Navy and Marine Corps have been greatly augmented and also require a greatly increased number of medical officers to meet their needs. The Red Cross also must have its units filled, and the allies are urgently in need of American physicians to fill their depleted ranks. The call is imperative and must be heeded. Active young men between 25 and 35 years of age are most desired, though those up to 55 years of age, if in good health, will be accepted. What has Maryland done toward meeting this necessity? Some of our young men have gone into the regular army and navy, and the State troops are fully equipped with medical officers. Many others have become members of the Officers Reserve Corps and are now in training camps, or actually serving in this country

or in Europe. A base hospital, fully equipped, has gone abroad under the auspices of the Johns Hopkins Hospital and is now "somewhere in France." A second base hospital under the auspices of the University of Maryland has been formed and is now about ready for duty. This hospital is under the direction of Dr. A. C. Harrison and includes in its roster such well-known physicians as Drs. Frank Martin, Carey B. Gamble, Jr., Arthur M. Shipley and Hugh Brent. Miss Nettie Flanagan, formerly superintendent of nurses at the University Hospital, has accepted the position of head nurse of this base hospital.

With the departure of so many of the prominent and active members of the profession, the demands upon those who, by reason of age or of physical disability, will be obliged to remain at home will be very great and must be borne as a patriotic duty.

But, on the other hand, are the doctors being treated fairly? We do not think so. Some months ago we were told that interns in the hospitals would not be disturbed, but now the civil hospitals, which soon may be military ones, are being crippled by the drafting of their interns, and the training of these young men seriously interfered with. They would be of much greater service to the country if their training was thorough than if they were insufficiently educated; and they require at least one year of hospital work for a minimum training.

Moreover, the Government is very short-sighted in not exempting medical students from military service. We do not know how long this war will last, and it is essential that the supply of physicians shall be kept up. General Crowder, the provost-marshal, says he sees no reason why medical students should be exempted. We hope his opinion may not prevail. Medical and premedical students should be encouraged to continue their studies.

Medical Items.

THE University of Maryland base hospital unit is rapidly taking shape. Under the direction of Dr. Archibald C. Harrison it is fast completing its quota of 20 physicians, 65 nurses and 150 enlisted men. The personnel of the medical and surgical section of the unit follows: Director, Dr. Archibald C. Harrison, major; Dr. Arthur M. Shipley, adjutant; Dr. W. K. White quartermaster; Dr. Edward A. Looper, first lieutenant; surgeons with the rank of captain, Drs. Frank Martin, Sompton Riely, Herbert H. Haynes, Hugh Brent, Daniel C. Patterson, Chadburn A. Andrews, Eugene H. Hayward, Edward W. Johnson and Thomas R. Galvin; medical staff with rank of first lieutenant, Drs. Cary Gamble, J. Burr Piggott, Corbin Street, Harry M. Stein, Erwin Meyer, and laboratory doctors, John Evans and D. Wharton Smith.

The following have been selected for the rank of private and will be listed as orderlies: Abraham H. Mandelberg, S. Bernei Austrain, Harry S. Schapiro, Samuel C. Brown, S. Ellworth Keller, Leroy E. Affayrout, Arthur B. Rapp, George M. White, Paul G. Brady, W. Vernay St. Clair, Francis Loughran, John Restigan, Alfred N. L. Reichert, Robert Raugh, Bernard Mullin, Jerry Strianese, Frederick A. Marshall, William J. Duffy, Preston F. Wickes, Clarence C. Cole, Robert W. Crane, James A. LeCuyer, C. Gerard Smith, John H. Harp, Henry C. Clark, Abraham Tobias, Philip H. Orth, Edar H. Kregel, J. Howard Schuster, Frank Berger, Samuel Warfield, Robert M. Armstrong, William H. Moller, Samuel Hoffberger, Henry Hoffman, J. Walter Marshall, John C. E. Bransman, Ferdinand Friendlich, Sylvan Hamburger, Clarence E. Smith, Elmer C. Cavey, Joel D. G. Hutzler, Emmitt G. Robertson, Daniel Blumenburg, John J. McCormick, Richard T. Kelly, Edgar T. Mutto, Frank L. Hodgess, Ralph E. Hodgdon, Gilbert V. McBurl, Charles F. Shaffer, W. James Shilling, Alfred E. Ottenheimer, C. Howard Isaacs, William Schneider, Henry E. Ward, Herman Scher, John Fred Silvernagel, Foster Townsend, Harry Dischler, J. Harry Rigger, Harry V. Skipper, George J. Haggerty, Frank T. Huson, Ralph P. Nicholson, Harry Rubin, Edward H. Frederick, Junius F. Andrews, Wallace W. Batchelor, Howard Tucher, William M. Travers, F. William Apitz, E. Percy Weedon, Jr., Morton Y. Bullock, Frederick G. Baugh, Leroy F. Rock, Daniel G. Anderson,

Godfrey Funk, Edwin R. Grumbine, William F. Coale, William E. Hemming, John F. Burger, Steven V. Cerniglia, Charles P. Smoother, Guy H. Weedon, B. D. H. Powell, Bernard J. Cahn.

DR. ROBERT W. JOHNSON of Baltimore has sailed for France.

DR. ERNEST W. WATSON has resigned from the staff of the Brady Urological Institute and has opened offices in Buffalo.

DRS. HARRY C. ALGIRE, Charles R. Parker, William G. Coppage, Jacob Fisher and L. Ridgely Wilson have been appointed surgeons to the Baltimore Park Board.

DR. JOSEPH W. ROBERTS has been appointed medical superintendent of the Maryland General Hospital. Dr. Roberts is from Salisbury.

DEATHS

HOWARD ROBERTSON STRATTON, M.D., Victory, N. Y.; Baltimore Medical College, 1908; aged 40; died in Cato, N. Y., June 2, from the effects of poison accidentally self-administered.

GEORGE C. BROOKS, M.D., Sunbury, N. C.; College of Physicians and Surgeons, Baltimore, 1884; aged 57; formerly a Fellow of the American Medical Association; died at his home June 11.

JOSEPH FRANCIS TEARNEY, M.D., Baltimore; University of Maryland, Baltimore, 1879; aged 62; a Fellow of the American Medical Association; medical examiner for the Baltimore and Ohio system since 1884 and chief medical examiner since 1912; died at his home June 25.

ALEXANDER MCKEE, M.D., Glens Falls, N. Y.; Maryland Medical College, Baltimore, 1899; aged 43; a member of the Medical Society of the State of New York; milk and food inspector for Glens Falls; died at the home of his sister in Hudson Falls, N. Y., June 11.

CHARLES EDWARD SCHOLL, M.D., Logansport, Ind.; University of Maryland, Baltimore, 1873; aged 74; formerly a member of the Indiana State Medical Association; a Confederate veteran; who was knocked down June 3 in an altercation regarding a tile drain; died June 17 from concussion of the brain.

JOHN BYRON ROBINSON, M.D., Brooklyn, Md.; University of Maryland, Baltimore, 1862; aged 81; for nearly half a century a practitioner of Anne Arundel county; died June 2 in Johns Hopkins Hospital, Baltimore.

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ANOMALIES OF THE GALL-BLADDER AND BILE PASSAGES, WITH THE REPORT OF A DOUBLE GALL-BLADDER AND A FLOAT- ING GALL-BLADDER.*

By August Schachner, M.D.,
Louisville, Ky.

ABDOMINAL surgeons of today, and more especially of the future, will hardly be content with a general knowledge of the anatomy of the abdominal viscera.

Refinements in operative and diagnostic technic will demand a detailed knowledge of the anomalies, in whole or in part, of abdominal organs.

In view of this forecast, it behooves us to investigate and more fully report the various anomalies as they present themselves.

To this end there should be a closer co-operation between the operating-room, the anatomic laboratory, and the pathologic laboratory, in order that definite data may at an early period be recorded, indicating the possible frequency of the various anomalies.

This paper is based upon an inquiry into the literature, present and past, and an exchange of communications with a number of surgeons and hospitals. I wish to publicly record my thanks to the various surgeons and hospitals for their answers to my communications.

The inquiry developed the fact that practically no additional material was acquired through these communications. That this result is misleading, there can be but slight doubt, and the fact that one operator (Kehr) who follows somewhat different lines and with different results, so far as anomalies are concerned, strongly supports this view.

The array of anomalies presented by Kehr stands alone both as to number and variety. This exceptional collection is partially

*Reprinted from *Annals of Surgery* for October, 1916.

explained through Kehr's statement, that a more thorough search should be undertaken at the time of operation and that the operative procedure should be carried out through a larger incision, or, at least, an incision yielding a more accurate survey of the field of activity. He condemns what he calls "the button-hole incision," so commonly employed in American surgery.

We feel inclined to add that the result of the correspondence left us convinced that inadequate incisions do defeat an accurate survey, and that many valuable findings have been lost in the past through the absence of proper search and a suitable system of recording the anomalies that were revealed.

It may be well to say that this paper is restricted to congenital anomalies, and not to malformations resulting from pathological processes. Further, many reports encountered, in examining the literature, were rejected because they were so obviously deficient in definition, or so apparently due to pathological processes, that their value as reports was hardly justified. No effort was made to study the vascular anomalies attending the blood supply of the liver, gall-bladder, or bile passages.

In many instances it was shown in the cases reported, that anomalies in this region follow the rule of anomalies elsewhere in the human subject, namely, in not occurring singly, *i. e.*, an anomaly of the gall-bladder may have an attending anomaly of the ducts or the blood supply, or some other part of the hepatic system. This is especially noticeable in the properly conducted post-mortem examinations, where the investigations could be carried out in detail, a privilege often denied during a surgical operation.

When the development during the embryological period is disturbed, this disturbance is usually not of an isolated nature.

SYNOPSIS.

ANOMALIES OF GALL-BLADDER.

Anomalies relating to gall-bladder

cavity Double gall-bladder.
Bilobed gall-bladder.
Diverticulum of gall-bladder.

Anomalies relating to location of

gall-bladder Intrahepatic gall-bladder.
Left-sided gall-bladder.
Transposition of viscera.
Floating gall-bladder.

Individual anomalies..... Absence of gall-bladder.
Hour-glass gall-bladder.

ANOMALIES OF BILE PASSAGES.

- (1) Double cystic duct.
- (2) Anomalies of hepatic ducts.
- (3) Absence of common duct.
- (4) Anomalies of common duct.

Double Gall-bladder.—To come under the above classification each gall-bladder should have its independent cystic duct, thus differentiating it from a bifid gall-bladder in which cavities are distinctly separate, but communicate with the common duct through a single cystic duct.

Case I.—Dr. Purser exhibited a liver with two gall-bladders. It was taken from a girl aged 11, who had lately died of malignant scarlatina in Sir Patrick Dunn's Hospital. At the post-mortem, besides the ordinary changes caused by the disease, two separate gall-bladders were found, each of which had a distinct cystic duct; and these opened into the bile duct, the one at some distance from the other. There were no marked anomalies in the liver except that the common hepatic duct, instead of dividing into two branches when coming into the liver, divided into three, one to the left, another to the right and a third running into the posterior part of the liver. These ducts did not communicate with one another, but were distinct in their whole course.

Case II.—Dr. Purser (*British Medical Journal*, 1886, Vol II, p. 1102) was indebted to Dr. Foot for a case recorded in the *Philosophical Transactions*. The subject was a lady aged 31, who for some time before her death had suffered from loss of appetite, vomiting and pain. At the post-mortem examination her lungs were found to be in a state of commencing phthisis. The spleen was smaller than usual, but the liver was so large that it occupied the left hypochondrium as well as the right; there were strong adhesions on both sides; there were two gall-bladders, both distended with bile, one in the right and the other in the left lobe of the liver.

Case III.—The existence of the double gall-bladder was not recognized until the peritoneal covering was removed. Then it was apparent that the gall-bladder was double from the fundus to the neck.

There were two cystic ducts, the one communicated with the hepatic duct, the second subdivided into two subdivisions. The course of one subdivision was unavoidably lost, and that of the other subdivision communicated with the common duct. The points in the case are double gall-bladder with a single neck and two cystic ducts. (Cruveilhier, E.: *Bul. Soc. Anat. de Paris*, 1860, XXXV, p. 66.)

Case IV.—On opening the abdomen through the right rectus muscle I found a distended gall-bladder which I could not empty. On tracing the cystic duct downward to discover the cause of the obstruction I came upon a firm nodule, which I took at first to be a calculus. As it was apparently firmly impacted, I cut through the peritoneum covering the duct and discovered that the supposed calculus was a thickening in its wall about three-quarters of an inch from its junction with the common bile duct. I ligatured and divided the duct and then found that I could not strip up the gall-bladder in the usual way, and the duct tore just above

the nodule in the attempt. On further dissection I found another duct which I ligatured and divided, covering the stump with peritoneum, and closed the belly.

On examining the specimen (now in the Museum of the Royal College of Surgeons of England, No. 561.31) the ducts were at once evident, and closer examinations revealed another sack above and completely concealed by the distended lower one. On section two complete gall-bladders were evident, joined only along a narrow portion of their circumference. The larger one contained thick bile-stained mucus, the smaller thin bile. On examining the portion of the cystic duct belonging to the larger gall-bladder I found it patent at its common duct end; at the site of the nodule its lumen was a little increased in size and ulcerated, as if from the lodgement of a calculus. Above this it appeared to be obliterated. (Sherren: *Annals of Surgery*, Vol. LIV, p. 204.)

Case V.—Author's case of double gall-bladder. Miss G., aged 52, of Simpsonville, Ky., was referred to me through the kindness of her physician, Dr. Joseph Perrin of the same place. She had been a sufferer from gall-stone colic and dyspepsia for the last 15 or 20 years.

Operation.—At the Jewish Hospital, March, 1914. Incision right semilunar line. On exposing the gall-bladder a raphé was evident, passing from the fundus to the neck and dividing the gall-bladder surface into two unequal halves. A mesentery existed, which also passed from the fundus to the neck. The inner blade of this mesentery became lost in the peritoneal covering of the duodenum; the outer blade was reflected over the hepatic flexure of the colon with which it became merged. The mesentery, which measured about 6 cm. from its central to peripheral borders, was freed from the gall-bladder, permitting of easy access to the same. The unequal division of the surface was at first thought to be the result of former inflammatory attacks. On opening the gall-bladder the error of this conclusion became evident. The gall-bladder was plainly a double one, with stones in each gall-bladder. After draining these and removing the stones a careful examination was conducted to more fully determine the exact arrangement. The result of this was a double gall-bladder, each with its independent neck and, so far as we were able to determine, two cystic ducts. Both gall-bladders were drained, the patient making a satisfactory recovery, which has continued.

Bilobed Gall-bladder.—A gall-bladder, the cavity of which consists of two lobes communicating with the common duct through a single cystic duct.

Case I.—The gall-bladder was bilobed. The greater lobe being discolored, and almost gangrenous at its lower portion. This lobe contained one calculus. The other lobe seemed to be normal. There was only one cystic duct draining both lobes. It was patulous. (Deaver and Ashhurst: Vol. II, p. 42.)

Diverticulum of Gall-bladder.—A gall-bladder consisting of one large cavity and one or more smaller cavities or recesses communicating with the larger or true gall-bladder.

Case I.—The gall-bladder was distended and full of calculi of various sizes. The neck of the gall-bladder just above the cystic duct was pouched in such a way as to form a sack which pressed upon the common duct and caused obstructive jaundice. (Deaver and Ashhurst: Vol. II, p. 42.)

Case II.—Kehr (Vol. I, p. 127) reports a diverticulum of gall-bladder filled with stones, and in the same case the common duct divided just beyond the entrance of the cystic duct into two divisions.

Case III Kehr (Vol. II, p. 291) reports another case of diverticulum together with unusual vascular anomalies and pathology.

[AUTHOR'S COMMENT.—The operation lasted one hour, and it is remarkable that so much vascular anomaly and pathology could be revealed and cared for in one hour, even though the incision was a free one.]

Case IV.—Macroscopic appearance: The gall-bladder on its inner surface, near the fundus, presented an enlargement of an oval shape. The maximum measurement in length was 15 mm. The maximum measurement in breadth was 8 mm. The highest point above the surrounding surface was 3 mm. An opening into this 1 mm. in width was present.

Case V.—Macroscopic appearance: The wall of the gall-bladder measured 6 mm. in thickness. This thickness was made up of distinct lamellæ, much like in structure to that of a thrombus. The peritoneal covering is also thickened. On the inner surface of the gall-bladder a wedge-shaped opening 8 mm. in length was observed. This cavity was lined throughout by mucous membrane.

Case VI.—Macroscopic appearance: In the fundus of the gall-bladder there was a funnel-shaped excavation. The surrounding edges of this cavity were 3 mm. in thickness and 4 mm. in width. In this case the microscopic examination proved this to be adenomatous in character. (Herman Wetz, Kiel: *Über Divertikel Der Gallenblase.*)

Case VII.—Diverticulum of gall-bladder occurring in a child one year of age. The compartment occurred near the fundus. The dividing septum occupied a transverse position and measured 2 mm. in thickness. The septum was 8 mm. in distance from the fundus. (Dévé: *Bul. Soc. Anat., Paris, 1903.*)

ANOMALIES RELATING TO LOCATION OF GALL-BLADDER.

Intrahepatic Gall-bladder.—A gall-bladder partly or entirely imbedded in liver substance as opposed to merely occupying the classical gall-bladder depression on the under surface of the liver.

All degrees of this condition may occur from a small bridge of liver tissue passing across from the quadrate to the right lobe to complete submersion of the gall-bladder so that no trace of it

is discernable from the outside. The latter condition is the only one which would be confused with a misplaced or absent gall-bladder, but in this degree it is extremely rare. According to Dévé, the gall-bladder is only truly intrahepatic in infancy. Later on in life the covering of the liver tissue atrophies on the under surface, and the gall-bladder becomes exposed. There is a case recorded by Lemon where the fundus of the gall-bladder alone projected and in which gall-stones were present (Walton).

Dévé speaks of the arrangement in reptiles, in which the gall-bladder is almost completely buried within the liver substance. He expresses surprise that the introhepatic arrangement has not attracted more attention. The existence of intrahepatic gall-bladder was marked through a difference in color, the yellowish or greenish color of the gall-bladder being in striking contrast to the reddish-brown color of the liver substance; as a further guide, the topographic elevations of the overlying liver substance. Dévé, in a study of 130 livers of infants, discovered 11 instances of intrahepatic gall-bladder; 3 were typical and in 8 the fundus alone was more or less imbedded; no intrahepatic condition was noticed in adults.

To the case of Lemon may be added 4 cases observed by Kehr (Vol. I, p. 116), making a total of 16 intrahepatic gall-bladders.

Left-sided Gall-bladder.—One occupying a position to the left of the falciform ligament in a normally-placed liver.

Case I.—The present specimen I wish to report was obtained from an anatomical subject, a full-time female fetus, in the Anatomical School of the London Hospital. The history of the cause of death was naturally difficult to obtain, but as far as could be ascertained this took place in prolonged labor. The gall-bladder was situated on the left lobe, but is normal in shape and attachment. The neck of the bladder is directed toward the right instead of toward the left side, and there is a well-marked Hartman's pouch just before the origin of the cystic duct. The fundus reaches to but does not project beyond the free margin of the liver. The gall-bladder lies well to the left of the umbilical vein, but the area between it and the structures which presumably should be called the quadrate lobe is small, so that in life the gall-bladder lay close to the falciform ligament and was, when viewed from the right side, wholly covered by this structure. If, therefore, symptoms of disease of the gall-bladder or some neighboring structure had arisen which necessitated exploration through the usual incision, traversing the right rectus, the gall-bladder would at operation have been invisible, and even if the liver had been pulled well over to the right, it would have remained hidden beneath the falciform ligament which would have been stretched across it.

The difficulty which would arise at operation with such a condition would be to discover the gall-bladder, and it would be necessary, if the under surface of the right lobe were free from adhesions and visible, to distinguish it from the three following

conditions: extreme fibrosis and atrophy of the gall-bladder after inflammation, complete congenital absence of the gall-bladder and an intrahepatic gall-bladder. (Walton: *Lancet*, 1912, p. 925.)

Case II.—A case of left-sided gall-bladder occurred in a child 10 years of age at the Hospital Trousseau, in which there occurred an abdominal arrangement of the caudate and quadrate lobe, together with a gall-bladder attached to the left lobe of the liver.

Case III.—The gall-bladder was not only left-sided, but was situated obliquely in its relationship to the liver. This occurred in an adult.

Case IV.—Another case, likewise in an adult, in which the neck of the gall-bladder was attached to the left lobe of the liver, but the fundus and body detached, was described as a case of ectopia of the gall-bladder. (Dévé, *Bul. Soc. Anat.*, Paris, 1903.)

Case V.—Hochstetter refers to a single case of left-sided gall-bladder mentioned by Huschke. Huschke's case was that of an 18-month-old child in which the gall-bladder, otherwise normal, was situated to the left side and practically covered by the ligamentum teres.

Case VI.—Left-sided gall-bladder and transposition of the umbilical vein to the right. This case was that of an adult. There was an absence of the lobus quadratus and the presence of a left-sided gall-bladder. The gall-bladder was located to the left of the ligamentum teres, with a small area of liver substance between the gall-bladder and the ligaments. Circulatory anomalies were present in this case.

Case VII.—Recently-born infant. The gall-bladder located to the left of the ligamentum teres and an absence of the lobus quadratus. In addition, in this case the left lobe exceeded in size the right lobe of the liver. In this, as in the former case, there was an anastomosis between the umbilical and portal vein.

Case VIII.—Body of an adult in which the gall-bladder was located immediately to the left of the ligamentum teres. The venous arrangement was practically normal.

Case IX.—Body of an adult. In this the right and left lobes were about an equal size and the quadrate lobe was absent. The gall-bladder was located to the left of the ligamentum teres.

Case X.—A child, 18 months old. The quadrate lobe was absent, and the gall-bladder was located immediately to the left of the ligamentum teres. (Hochstetter, Ferdinand: *Archiv f. Anatomie und Physiol.*, 1886, p. 369.)

Cases XI and XII are represented by two cases referred to by Kehr, Vol. I, p. 119.

Case XIII.—See Case II, Double Gall-bladder. In this the gall-bladders were widely separated, one occupying the right and the other the left lobe of the liver.

Transposition of Viscera.—In this condition the liver not only occupies the left instead of the right hypochondrium, but there is a reversal of the lobes, the left being larger than the right, and receives the gall-bladder.

Last, there is a dextro-position of the heart as well as reversal of duodenum and stomach, which becomes our most important diagnostic aid in verifying our suspicions regarding the visceral transposition and disturbances that might arise in a gall-bladder so situated.

Case I.—A left rectus incision was made. The gall-bladder was readily accessible. Its walls were thickened, but free from adhesions. About 70 c.c. of greenish black bile was aspirated, and the gall-bladder was incised. Four mulberry stones, the size of a pea, were removed. The ducts were freed. The gall-bladder was drained. The anomaly of transposition of the viscera was verified. The patient did not bear the anesthesia well, and a hasty closure was made. An uneventful recovery followed. (Horn: *Situs Viscerum Inversus with Gall-stones. Annals of Surgery*, Vol. LXII, p. 425.)

Horn refers in his paper to cases by Beck, Fenger, Kehr, Hupp and Bland Sutton, in which the reports definitely refer to the verifications of the condition through operation. There are two other cases in Horn's report, one by Billings, in which no mention is made of operative verification, and one from the Mayo Clinic, with desirable details lacking. If we accept the cases in Horn's paper, we have a report of 8 cases.

Kehr reports two cases of situs transversus (Vol. I, pp. 121 and 122), and in the absence of definite information, assuming that one of the two cases has been mentioned by Horn, we have another case. Kehr further mentions the report of Benda (Vol. I, p. 123), who has found two cases of situs transversus in 10,000 autopsies at the Urban Hospital in Berlin. This gives a total of 11 cases of situs transversus.

Floating Gall-bladder.—A gall-bladder with a distinct mesentery and usually attended with a wide range of mobility.

Case I.—Gall-bladder found to be small and containing numerous calculi. The remains of pericholecystic inflammation were evident in numerous adhesions. The gall-bladder was freely movable after the adhesions were liberated and had a distinct mesovesice which extended from near the fundus to the cystic duct. (Deaver and Ashhurst: Vol. II, p. 43.)

Case II.—Kehr (Vol. I, p. 182) reports one case of a gall-bladder with a well-developed mesentery.

Case III.—Author's case of floating gall-bladder. Mrs. H., aged about 45 years, living near Ellettsville, Ind., was seen through the kindness of Dr. W. W. Harris of Ellettsville, Ind., in consultation with Dr. Allen Pierson of Spencer, Ind., in the month of June, 1906. She had been suffering from digestive disturbances, with vague pains in the upper abdomen. On inspection and palpation a movable mass, somewhat the shape and about the size of a normal kidney, could easily be mapped out through a rather thin abdominal wall. The range of motion was extensive enough to permit this mass to be pushed to either kidney region, but its downward excursion was more limited. The diagnosis

lay between a floating kidney and intestinal neoplasm, and a distended gall-bladder. On opening the abdomen it proved to be the latter. The gall-bladder possessed a mesentery passing between the upper surface of the same and the under surface of the liver. The operation, which occurred in a farmhouse, was made through the smallest possible incision, that unfortunately did not permit a careful examination of the peritoneal arrangement. The gall-bladder was aspirated, removing about 250 c.c. of clear, glycerin-like fluid and a stone that was impacted in the neck.

Cases IV, V, VI, VII and VIII.—Brewer, in the examination of 100 subjects in the Anatomical Laboratory of Columbia University, found five cases of gall-bladders with distinct mesenteries, allowing considerable movement. In three of these there was also an extension outward of the free border of the lesser omentum to the fundus, and in one instance to a point one inch beyond the fundus, thus forming a double mesentery, the upper being attached to the under surface of the liver, the lower to the duodenum and transverse colon, and in the one instance to the hepatic flexure of the colon. (Brewer: *Anatomy of Gall-bladder and Ducts, Annals of Surgery*, Vol. XXIX, p. 723.)

Absence of Gall-bladder.—Including only cases of a congenital absence of agenesis, as opposed to an absence of gall-bladder due to a destruction of the same through a pathologic process.

Case I.—The case occurred in a rhachitic colored child, two years old, that had never walked unsupported and had presented no symptoms suggestive of any anatomic peculiarity referable to the biliary apparatus or to other structures.

At the post-mortem the liver appeared of normal size and condition. It presented a whitish nodule at its anterior margin.

Histological examination of section from which shows the remains of hepatic parenchyma in part in a state of fatty degeneration, together with the hyperplasia of connective tissues, accumulations of round-cells, and in places of homogeneous loss of structure, changes that I take to be syphilitic origin. The section that I exhibit shows the presence of the hepatic portal and biliary vessels. No gall-bladder could, however, be found, either attached to or detached from the liver, or even contained within the structure of this organ, and as I show you, the usual fissure for the gall-bladder is wanting, and there is nothing suggestive of the previous presence of this viscus.

The case thus clearly resolves itself into one of agenesis of the gall-bladder. The absence of the gall-bladder is common in some animals, as, for instance, the elephant, the rhinoceros, the camel, the goat, the deer and some species of fish, some birds and some rodents.

Case II.—In 1865 Sands (*New York Medical Journal*, June, 1865, Vol I, p. 222), before the New York Pathological Society, reported finding in the dissecting-room in a tuberculous male subject about 20 years old a liver without a gall-bladder and

without a fissure for its lodgement. The liver was small, weighing one and three-fourths pounds, and its quadrate lobe was wanting.

Case III.—Tambault and Schachman (*Bulletin de la Société Anatom. de Paris*, 1882, LVII, Ann. 4e sér., tome VII, p. 499) have reported the case of a paretic dement, who after death presented, in addition to classic lesion of paretic dementia, a small liver with absence of the gall-bladder; the fossa for this viscus being replaced by a small fissure. There was no indication of a cystic duct. The hepatic ducts presented no abnormalities. During life there had been no symptoms suggestive of the absence of the gall-bladder. (A. A. Eschner: Congenital Absence of the Gall-bladder, *Med. News*, Phil., 1894, LXIV.)

The same author reported a series of 12 cases, including his own, and from these 12 cases the first 3 above reported have been taken, the remaining 9 of Eschner's list being too doubtful to justify repetition. Eschner himself is uncertain regarding the majority of his cases as being cases of agenesis of the gall-bladder.

Case IV.—This specimen was removed at the post-mortem examination of a man, aged 49, who died from pulmonary tuberculosis. There was nothing of any interest in his previous history. The main point of interest about the specimen is that, in spite of the absence of the gall-bladder, the hepatic ducts are normal, and there is no dilation of the bile ducts. (Arthur Latham: Absence of Gall-bladder, *Journal of Anatomy and Physiology*, 1897-1898.)

Case V.—According to Rolliston, a second one was shown by Thursfield, at a meeting of the Pathological Society in 1903. Both of these (one of these being Latham's) were carefully dissected, so there was no doubt that the condition was one of complete absence and not extreme fibrosis after inflammation.

Case VI.—There is a third specimen in the London Hospital Museum, No. 1395 A, where also the condition is clear. In this case there is a deep furrow in the position which the gall-bladder should occupy, so that the quadrate lobe is quite distinct from the rest of the lobe. (A. J. Walton: *Lancet*, 1912, p. 925.)

Case VII.—The case was that of a child that died on the eighth day. The abnormally large right lobe over the left was apparent from the upper surface. On the under surface the absence of the gall-bladder and the lobus quadratus, as well as the unusually small left lobe, were notable. The sagittal fissure was converted into a canal through the presence of a bridge of liver substance. This canal was traversed by the umbilical veins. (Hochstetter, F., *Archiv. f. Anatomie u. Physiologie*, 1886.)

Förster refers to the gall-bladder being absent in a number of cases, and adds that in such cases the common duct is usually larger than customary. He also mentions the possible absence of the common and hepatic ducts, and in other cases the hepatic ducts remaining united and emptying separately into the duo-

denum, or one into the duodenum and the other into the stomach, and, further, the possible division of the common duct in which one-half communicates with the stomach and the other half with the large intestine. (Förster, August: *Die Missbildungen des Menschen*, Jena, 1865.)

Weltz, without giving details, refers to cases of absence of gall-bladder reported by Wahlborn, A. G. Richter, Wiedeman, Amussat, and Buttner. (Weltz, G. H.: *Ueber Divertikel der Gallenblase*, Kiel, 1894.)

Hour-glass Gall-bladder.—A gall-bladder consisting of two cavities separated by a pervious isthmus. Adhering to the rule of recognizing only such anomalies that are of congenital origin, instead of anomalies dependent upon a pathologic process, the writer has been unable to find any instance of a true hour-glass gall-bladder. Several cases of hour-glass gall-bladder of an inflammatory origin have been recorded by Deaver and Ashhurst and Kehr, as follows:

Adhesions between the gall-bladder and stomach. These were ligated and cut and the gall-bladder was found to be hour-glass in shape, both pouches filled with calculi. The other reference by Deaver is as follows: Adhesions between liver and duodenum. Gall-bladder was hour-glass in shape, the two portions being united by a fibrous band. Distal portion, which was free from calculi, was removed. Proximal portion contained four stones. Cholecystostomy was performed. (Deaver: Vol. I, p. 43.)

Kehr refers to several cases of hour-glass gall-bladder due to the presence of a former ulcer.

ANOMALIES OF BILE PASSAGES.

Double Cystic Duct—Case I.—Dr. Dressman reports a case of double cystic duct as follows:

The woman was 42 years of age. For the last six or seven years she had abdominal pains, especially at the time of her menstruation. On examination a tumor the size of a fist, movable and occupying the left side above the level of the umbilicus. The uterus was anteflexed and had a small subserous myoma. An abdominal section was performed January 4, 1907. The left-sided movable tumor above referred to proved to be an enlarged and elongated gall-bladder containing numerous large stones. A cholecystectomy was performed. The bladder was separated from the liver, cystic artery ligated and the cystic duct divided to permit an investigation of the common duct. After a division of the cystic duct, much to the surprise of the operator, a second cystic duct became apparent. On careful investigation it was proven that both ducts united just before their junction with the common duct. These two ducts paralleled one another and opened independently in the gall-bladder, each opening being separated from the other through a space of 1 cm. (Dressmann: *Deutsche Zeitschrift für Chirurgie*, Vol. XCII, 1908, p. 401.)

Case II.—Kehr refers to two cases of double cystic duct reported by Ruge and Dressmann, the latter being the foregoing case (Vol. I, p. 127).

Anomaly of Hepatic Duct.—Case III.—The specimen was taken from the body of a man, aged 49, who died in the Great Northern Hospital, under the care of Dr. Cholmeley.

The excretory apparatus of the liver is here so arranged that the whole of the bile must have passed through the gall-bladder on its way to the intestine. The gall-bladder itself is much smaller than usual. When laid open it measured two inches in length, and rather less in breadth. It would hold about two drams of fluid. In its upper or attached wall there are two openings; the larger one near the center is the orifice of the principal hepatic duct; the smaller one nearer the fundus is the orifice of a cystohepatic duct. The large ducts of the left lobe pass across the longitudinal and transverse fissures, where they become superficial and join the principal duct of the right lobe shortly before it opens into the gall-bladder.

The cystic duct, which appears to be the sole channel of communication between the liver and duodenum, is at its commencement constricted so as to admit nothing larger than a probe, but immediately dilates considerably. The arrangement described in this case, which appears to be so abnormal in man, is the normal one among some of the lower animals. Thus Professor Owens states that in certain fishes, wolf fish, *Erythrus Lepidosiren*, the bile is conveyed to the gall-bladder by hepatocystic ducts, and thence by cystic duct to the duodenum. Again, in certain reptiles, *Siren Amphiuma*, the hepatic ducts communicate with the cystic or the gall-bladder, and the bile is conveyed directly by the cystic duct to the beginning of the intestine. In *Mammalia*, on the other hand, as a rule, all ducts unite into one trunk, which in those having a gall-bladder joins the cystic duct to form the common duct.

Malformation of the Gall-bladder and Hepatic Duct.—H. H. Crooknell (*Trans. Path. Soc.*, London, Vol. XXII, p. 163).

Case IV.—See Case I, Double Gall-bladder. The hepatic duct divided into three divisions, right, left and posterior. These ducts did not communicate with one another, but remained distinct throughout their course.

Accessory Hepatic Ducts.—Cases V. VI and VII are represented by three cases reported by Kehr which terminated blindly near the neck of the gall-bladder. Kehr further describes three possible anomalies of the hepatic duct and gall-bladder, one consisting of accessory hepatic duct, emptying directly into the gall-bladder, as it occurred in one of his cases. Second, where the right hepatic duct, singly or divided, empties into the gall-bladder, so that the bile from the right lobe passes through the gall-bladder in its way to the common duct, or duodenum, and a third variety, in which both hepatic ducts emptied directly into the gall-bladder,

and thus all the bile passed through the gall-bladder on its way to the duodenum. (Vol. I, p. 127).

Absence of Common Duct—Case VIII.—After an easy and natural labor of some four hours' duration she was delivered of a well-developed boy weighing a little over nine pounds. For the 24 hours after birth the child betrayed no abnormal symptoms. At my next visit, however (about 30 hours after delivery), I noticed an icteric appearance of the countenance, and upon closer inspection a well-marked yellow tinge on the whole surface was discovered. The nurse informed me that the discharges from the bowels were "almost like clay," and that the child had frequent attacks of vomiting. The symptoms continued to grow worse. The color of the skin changed to a brownish-yellow or bronze. The irritability of the stomach increased, convulsions supervened and in about 12 hours after my second visit, or 72 hours after birth, the child died in profound coma.

Section cadaveris, the tissues throughout the body were stained intensely yellow. The liver was swollen and enlarged. This was evidently due to distention of the biliary duct, as upon cutting into it an unusual amount of very thick bile oozed from the cut surface. The gall-bladder occupied its normal position, and was enormously distended with bile of about the consistency of syrup. The cystic and hepatic ducts presented nothing unusual, except that they were very much enlarged, a point I shall allude to again. They united at the usual place to form the common duct, the ductus communic choledochus also was very greatly distended and was about $\frac{3}{4}$ inch long; it then terminated abruptly in a very blunt, club-shaped extremity, without reaching the intestinal wall at all. (I. N. Danforth: *Chicago, Med. Jour.*, Vol. XXVII, p. 110, 1870.)

Gessner (Ueber Congenitalenverschluss der Grossen Gallengänge, Halle, 1886), after collecting the reports of 24 cases of congenital obliteration of the major bile passages, to which a 25th case (his own) was added, reached the following conclusions:

1. That so far no undoubted case of congenital obliteration of the major bile passages has been observed.
2. That many so-called cases are of uncertain etiological origin.
3. That the most certain, if not satisfactory, explanation for the so-called malformation is a condition that is luetic in origin.

[AUTHOR'S COMMENT.—None of Gessner's cases, in the writer's opinion, justified acceptance. All were in infants of a few weeks to a few months of age. A number were outspoken luetic, others doubtful, and still others more remotely doubtful. The cases suggested a luetic perihepatitis that has its origin during the fetal period of existence and resulted in an atresia rather than a malformation. In fact, some of Gessner's cases were entirely free from jaundice at birth.]

CONCLUSIONS.

1. Refinements in operative and diagnostic technic demand a detailed knowledge of the anomalies of abdominal organs, and therefore it behooves us to more fully investigate and report the various anomalies as they present themselves.

2. A more thorough search should, if possible, be made at the time of operation, and the operative procedure carried out through an incision yielding a more accurate survey of the field of activity.

3. The "button-hole incision" is not alone responsible for incomplete surgery, but through its employment many anomalies are overlooked.

4. Anomalies of the hepatic region follow the rule of anomalies in other regions in not occurring singly, *i. e.*, an anomaly of the gall-bladder may have an attending anomaly of the ducts or the blood supply or some other part of the hepatic system.

5. A double gall-bladder is one in which each gall-bladder has its independent cystic duct, thus differentiating it from a bifid gall-bladder in which the cavities are distinctly separate, but communicate with the common duct through a single cystic duct.

6. Five cases of double gall-bladder are recorded. Of these, one case was without other anomalies. Of those in which other anomalies were present (Case I) there existed, in addition to the double gall-bladder, an anomaly of the hepatic duct, which, instead of dividing into two branches, divided into three, right, left and posterior, and these ducts did not communicate with one another, but were distinct in their whole course. Case II, one gall-bladder was located on the right lobe and the other on the left lobe. Case III, there occurred a subdivision of one of the cystic ducts. Case V, there existed a mesentery, one blade of which became lost over the duodenum and the other over the hepatic fissure of colon.

7. In a bilobed gall-bladder the cavity consists of two lobes with a single cystic duct. Of this anomaly there is one recorded case.

8. In a diverticulum of the gall-bladder there is one large cavity and a smaller recess communicating with the larger or true gall-bladder cavity.

9. Seven cases of diverticulum of gall-bladder are recorded. Of these, five cases were simple and two cases complicated. Case II was complicated by a division of the common duct just beyond the entrance of the cystic duct; Case III by unusual vascular anomalies.

10. An intrahepatic gall-bladder is partly or entirely imbedded in the liver substance instead of merely occupying the classical gall-bladder depression. Of this anomaly 16 uncomplicated cases are recorded.

11. A completely imbedded gall-bladder may be confused with a left-sided or absent gall-bladder. According to D  v  , this anomaly is most common in infants and reptiles.

12. A left-sided gall-bladder occupies a position to the left of the falciform ligament in a normally-placed liver. Of this anomaly 13 cases are recorded. Seven cases were uncomplicated. Case II was complicated by an abnormal arrangement of the caudate and quadrate lobe, Case IV by an ectopia of gall-bladder. Cases VII and VIII by vascular and lobar anomalies. Case IX by absence of quadrate lobe. In Case XIII two gall-bladders existed, one on the right and the other the left lobe.

13. A left-sided gall-bladder may be concealed behind the falciform ligament and at an operation be overlooked entirely, or confused with a congenital absence, extreme fibrosis, or an intrahepatic gall-bladder.

14. In transposition of viscera the liver not only occupies the left instead of the right hypochondrium, but there is a reversal of the lobe, the left being larger than the right and receiving the gall-bladder. There is a dextroposition of the heart, as well as reversal of the duodenum and stomach, which becomes our most important diagnostic aid. Of this anomaly, 11 cases are recorded.

15. A floating gall-bladder has a distinct mesentery, and is usually attended with a wide range of mobility. Of this anomaly there are eight cases recorded.

16. Absence of gall-bladder includes only cases of agenesis or congenital absence, as opposed to absence due to destruction through pathologic process. There are seven cases of this anomaly recorded. Of these, Cases II and VII were complicated by the absence of quadrate lobe.

17. Absence of gall-bladder is common in some animals—elephant, rhinoceros, camel, goat, deer, some species of fish, some birds and some rodents (Eschner).

18. There were no cases of congenital hour-glass gall-bladder discovered. Several cases are on record occasioned by pathologic processes.

19. There were eight cases of anomaly of bile passages, as follows: Two cases of double cystic duct, 5 cases of anomalies of hepatic ducts and one case of absence of common duct.

20. The total anomalies numbered 76, of which 62, or 81+ per cent., were single, and 14, or 18+ per cent., were multiple.

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SUSPENSION LARYNGOSCOPY VS. DIRECT LARYNGOSCOPY—A COMPARATIVE STUDY.

Richard H. Johnston, M. D.,
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During the winter of 1909-10, Killian, in having some photographs made from the head of a cadaver suspended by a mouth spatula supported by iron rods with the mouth forced widely open, found that he could get a good view of the mouth, pharynx and larynx. He immediately began to experiment to devise an apparatus which would be of use on the living subject so that the operator would have both hands free for operative procedures in the larynx. How well he succeeded is shown by the fact that many laryngologists have found suspension laryngoscopy of value in selected cases. To describe the minutiae of the method would go beyond the scope of this paper. Suffice it to say that suspension laryngoscopy means the suspending of the head by means of a spatula which forces the tongue and epiglottis out of the line of vision and exposes the larynx at the same time that the mouth is held open by an attachment which fits over the upper teeth or hard palate. By turning screws the entire larynx can be brought into view and the operator has both hands free which does not obtain in other methods.

While Killian's discovery was a step forward in the surgery of the larynx, the fact that he used the cutting forceps adapted for other methods did not help materially in the use of the two hands. It remained for R. C. Lynch of New Orleans to improve on Killian's apparatus which has greatly increased its usefulness in that it is now possible to operate in the larynx through the mouth as in other parts of the body. Lynch has devised forceps for holding tissue, knives with blades at different angles for dissecting, an elevator for stripping perichondrium from cartilage, forceps for catching up blood vessels and a knot tier for throw-

ing catgut around them when necessary. With his apparatus and instruments he has dissected out multiple papillomata, singer's nodes and incipient epitheliomata by removing all the soft tissue in the larynx through the mouth as thoroughly as it can be done by thyrotomy; one decided advantage of his method is the fact that the mouth is more widely open than with Killian's laryngoscope which is of importance if one wishes to dissect out growths.

If one is expert with the direct laryngoscope the indications for suspension laryngoscopy are comparatively rare. From a limited experience in its use I believe there are conditions which make it indispensable.

Probably the most discouraging condition met with in the larynx is multiple papillomata in children and adults. Before the introduction of direct laryngoscopy, the diagnosis had to be guessed at in many children because it was impossible to see the larynx with the mirror. The direct method made it possible to see the tumors in every patient and to remove pieces from time to time with temporary improvement. But the treatment was not ideal because in the small larynx of the struggling child there was some danger of injuring the vocal cords or other structures. Tracheotomy was almost as frequent as before. Some patients were operated upon twenty or thirty times with persistent recurrences. It is obvious that this was not an ideal method of treatment. Lynch's method bids fair to place the treatment on a rational basis and encourages us in the hope that if we can get these patients in the beginning, we will be able to save some from tracheotomy and to cure promptly a certain number. In the treatment of this stubborn disease I believe suspension is superior to direct laryngoscopy.

Lynch claims that the removal of singer's nodes is simplified by suspension laryngoscopy. This may be true in children under general anaesthesia, but in adults I am sure the operation through the direct laryngoscope under local anaesthesia answers every purpose and is easier on the patient. For some years I have used a long cutting tip for the nodes which shaves the projection off sidewise and prevents possible injury to the vocal cords which may occur if the attempt is made to pick them off with the tip of the instrument. Singer's nodes are usually found at the junction of the anterior and middle thirds of the cords and cause a certain amount of hoarseness which is promptly cured by the above mentioned procedure.

In cases of stenosis in which it is desired to remove the soft tissues on both sides of the larynx before resorting to laryngotomy, suspension laryngoscopy will give better results than the direct laryngoscope because complete dissection can be done with Lynch's instruments and the bleeding controlled by means of an electric suction machine which removes all blood and secretion from the larynx. One drawback to the suspension laryngoscope

is the fact that general anaesthesia must be used in most cases while in direct laryngoscopy the majority of operations can be performed under local anaesthesia. In suspension laryngoscopy morphine and scopalamine must be used if local anaesthesia is to succeed. Even then the pain in the jaws from forcing the mouth open and in the neck and back of the head from hyperextension often prevents exposure of the larynx. I have not succeeded in using the apparatus under local anaesthesia and, as a result, I prefer the direct laryngoscope except in the cases mentioned above.

Killian is enthusiastic over the possibilities of the method and believes it will supplant direct laryngoscopy. In this he is mistaken for, if one becomes expert with the direct tube, one will certainly prefer it in routine work because of its ease of application. The difficulties in the use of suspension laryngoscopy are too great for it ever to come into general use.

In the use of morphine and scopalamine Killian advises that the patient be given, two hours before examination, a hypodermic injection of 0.01 gm. of the former and .0003 dcmgm. of the latter. One hour later the same quantity is again given. The larynx must be penciled with cocaine before introducing the spatula.

Lynch prefers to give a hypodermic injection of morphine— $1/6$ to $1/4$ gr.—and scopalamine— $1/150$ to $1/100$ gr.—one hour before the operation. As a local anaesthetic he uses cocaine—10 per cent. sol.—to the uvula and the posterior pharyngeal wall. After five minutes 5 to 10 drops are placed over the lingual and laryngeal surfaces of the larynx from a laryngeal syringe. After another short rest 5 to 10 drops are injected over the vocal cords and into the trachea. The spatula is then introduced.

To illustrate suspension laryngoscopy I will cite four cases which I have recently operated upon.

The first patient was a man, 42 years old, with a growth on the left vocal cord. The patient had been hoarse a year and was growing progressively worse. It was not possible to get a good view of the larynx with the mirror. A growth resembling a papilloma could be seen indistinctly. Believing the tumor benign, I advised removal through the suspension laryngoscope. The patient was etherized and the spatula introduced giving a good view of the larynx. The tumor involved the entire left cord and anteriorly had crept over to the right side. Its appearance was that of an epithelioma. Realizing that it was not possible to remove it in toto by any intralaryngeal operation, I dissected out two pieces with forceps and knife for microscopic examination. The growth proved to be an epithelioma.

The next patient was a boy, 8 years old, whom I had treated 5 years for multiple papillomata of the larynx. I had operated many times through the direct laryngoscope without eradicating the tumors. Under suspension laryngoscopy I dissected out the

growths, curetted the bases and applied alcohol to the bases as advised by Lynch. Reaction was slight and, in a few days, the patient who had had no voice for 5 years was able to talk with a hoarse voice. I accomplished more with one operation under suspension than I had with numerous efforts through the direct laryngoscope. At this time, 8 months after the operation there has been no recurrence. I believe the boy is well.

The third patient was a youth, 18 years old, with a small tumor about the middle of the left vocal cord. Under ether he was suspended and the growth dissected out after the method of Lynch. Healing was uneventful and the patient was soon restored to normal voice.

The fourth patient was 18 years old, with multiple papillomata of the larynx. Under suspension the larynx was cleared out as above described. He still has a papilloma on the left cord anteriorly which will be removed under suspension later.

Book Reviews.

DIAGNOSIS FROM OCULAR SYMPTOMS. By Matthias Lanckton Foster, M.D., F.A.C.S. Member of the American Ophthalmological Society; Ophthalmic Surgeon to the New Rochelle Hospital. New York: Rebman Company. Price \$6.

This handsome volume gives to each disease of the eye a much more deliberate consideration than is offered by treatises which include pathology and treatment. It is therefore a valuable book of reference for the office shelf—a sort of *edition de luxe*, with its delicate binding and large print. It has no illustrations.

The diagnosis aimed at does not include the diagnosis of general diseases from ocular symptoms, as might be supposed, but only of eye disease. It is very readable, being written in an attractive style, and entering into many minutiae in a leisurely way. The hurried, economical man will pass it by, but there are hosts of well-to-do specialists who like a display of attractive books and prefer to have on their own shelves a complete library of their specialty who will welcome it eagerly.

The author says he does not believe illustrations are necessary if a good pen picture of a disease is given, and has rejected the cuts offered him by the publishers.

THE SECRETION OF URINE (Monographs on Physiology). By Arthur R. Cushny, M.D., F.R.S., Professor of Pharmacology, University of London. With Diagrams. Longmans, Green & Co.: London and New York. 1917. Price \$3.

The object of this series of publications is to show the progress of physiology in those of its departments in which the greatest advances are being made. The compiler of each monograph is

expected to cull from the literature of the past only those portions which are suggestive of the lines in which future progress is likely to be made. He is himself a special worker in the subject of his monograph, and is expected to add to his own researches the very best that is being done in the laboratories of the world. The wide field from which contributory details have been drawn is indicated in the extensive bibliography at the end of the book.

The author advocates a "modern view" of kidney action, which he says has never previously been treated in detail. This view, as set forth on page 47, has to do with the treatment by the kidney of "threshold" and "no-threshold" substances. A large portion of the book is devoted to the application of this theory to the known facts of kidney lore, many of which fit into it in the most surprising way.

Toward the end of the book considerable space is given to the application of previous chapters to the ordinary bedside facts of practice.

TRANSACTIONS OF THE AMERICAN UROLOGICAL ASSOCIATION.

Fifteenth Annual Meeting at St. Louis, Mo., April 17-19, 1916. Published by the Association, Henry L. Sanford, M.D., of Cleveland, Secretary.

This is a very high-grade specialist publication, beautifully illustrated with radiograms. Its articles and discussions throw light on some of the most familiar and difficult questions of disease.

There is an instructive paper by Guy L. Hunner of Baltimore on ureter stricture. Others by Wolbarst, Molony, Thomas, Eisen-drath and Peterkin attract our attention on various phases of the specialty.

Perhaps the most original observation is in the article on cystitis in aged women, by Charlton, beautifully illustrated with colored radiograms, in which he reports about fifty cases of this almost unstudied complaint, without arriving at any conclusion as to the essential nature and causation of the trouble. His paper ought to attract more attention to this most distressing and familiar class of cases, which all practitioners meet occasionally in their daily ministrations and treat as best they may with that indifference to exact investigation which comes over us in dealing with the "mis-eries" of the aged and sensitive applicant for relief.

PHYSICAL EXERCISES FOR INVALIDS AND CONVALESCENTS. By Edward H. Ochsner, M.D., Attending Surgeon, Augustana Hospital, Chicago. Illustrated. St. Louis: C. V. Mosby Company. 1917. Price 75 cents.

This little manual of 40 exercises for convalescent patients is the result of efforts of Dr. Ochsner to improve the physical health of his patients, and grew out of a series of little slips which he used for their instruction, and of the condensation of directions given in manuals which he recommended for their guidance. We

take pleasure in recommending it to our readers. It is explicit in its directions and clear in its illustrations. In a future edition it might be improved by a series of exercises for patients in the recumbent posture and by those special exercises which are supposed to be peculiarly suited to the needs of women patients. Even children's needs might receive attention, in lesser exercises to be performed as games, with the aid of the nurse or mother.

STATE BOARD QUESTIONS AND ANSWERS. By Max Goepp, M.D., Professor of Clinical Medicine at the Philadelphia Polyclinic. Fourth Edition, Thoroughly Revised. Philadelphia and London: W. B. Saunders Company. 1917. Price \$4.25.

The purpose of this book is to provide a convenient compend for the use of those who desire to prepare for State Board examinations. The material has been selected from State Board questions actually proposed to candidate in the larger States, with due reference to practical usefulness.

As State Boards, being human, fall into a routine of questions which are asked with little variation year after year, the present revision has to deal mainly with recent advances in medical science, such as disturbances of metabolism, serological and other new clinical tests, and laboratory tests of later date.

The editor has not attempted to make his book perfect with the perfection of the high-grade textbook, following the State Boards rather confidently. The critical reader will find many textual errors, and the answers cannot be trusted as fully as the statements of a textbook, but the end of the work is accomplished, and the trembling candidate learns about what the worst is that an examiner is likely to do to him.

Some of the questions are a little antiquated, but there is still a little hayseed to be swept from professional chairs, and the candidate does well to carry a few last century "facts" and theories with him to the examination chamber.

THE INTERNAL SECRETIONS, THEIR PHYSIOLOGY AND APPLICATION TO PATHOLOGY. By E. Gley, M.D., Professor of Physiology in the College of France. Translated from the French and Edited by Maurice Fishberg, M.D., Clinical Professor of Medicine, New York University and Bellevue Hospital Medical College. Authorized Translation. New York: Paul B. Hoeber. 1917. Price \$2.

This volume of 250 pages is one of a series of interesting monographs on modern advances in scientific medicine. The first part, some 70 pages, is devoted to a very clear narration of the history of the doctrine of internal secretion, the slow stages in which it was approached from various imperfect points of view, and the full meaning which it bears in the minds of all scientists at this date. Any reader may learn from this exposition just what the thing is, and who have led us to this new development which ex-

plains so many of the old puzzles of physiology and disease.

The narrative then plunges into a very intricate discussion of the different internal-secretory or endocrine glands, their hormones and other secretions, the efforts made to isolate each and to define exactly what it does. Much of this is still in dispute, and its apprehension is necessarily very difficult, but every live physician ought to have a general idea of it, and our author has made as clear and simple as possible.

The doctrine that every part of the body is dependent upon every other is as old as the epistles of St. Paul, and a crude conception of a healing fluid circulating throughout the body underlies several modern medical schisms. Patient laboratory work makes increasingly certain this fact, that numerous glands, large and small, distill into the blood, in minute amounts, and perhaps only as needed, substances which regulate the nutritive and healing secretions and activities of other glands far distant in the body.

ROENTGEN TECHNIC (Diagnostic). By Norman C. Prince, M.D., Attending Roentgenologist to the Omaha Free Dental Dispensary for Children; Associate Roentgenologist to the Douglas County Hospital, etc. With 71 Original Illustrations. St. Louis: C. V. Mosby Company. 1917. Price \$2.

This is a handbook designed particularly for the guidance of general practitioners who have installed apparatus, yet whose use of it has been limited by lack of a good guide thereto. It deals with the arrangement of the office, the handling of the apparatus, the posture of patients, the preparation of patients as to meals, bismuth injections, etc., and the development of the plates and their storage. It does not enter into the interpretation of plates, as many large treatises are devoted to that.

There are some 37 fine plates illustrative of the postures of the patient (for foot, knee, stomach, etc.), with a minute direction as to the exact way in which to proceed in each of those exposures. It is hard to see how anything could make the work clearer to the practitioner.

The printer's work is admirable.

CANCER: ITS CAUSE AND TREATMENT. By L. Duncan Bulkley, M.D., Senior Physician to the New York Skin and Cancer Hospital. Vol. II. New York: Paul B. Hoeber. Price \$1.50 net.

As a bundle of straws at which a drowning man may catch, we might recommend this volume to cancer patients. To those who have a fighting chance for recovery, we would suggest other advisers.

The book has a certain value as a guide to the dietetic treatment of inoperable cases, and its strenuous advocacy of vegetarian diet may well influence us in the dietary supervision of cases receiving other forms of treatment.

Modern physicians are a unit in urging that patients with sus-

pected cancer should receive positive treatment at once. The general influence of this book is in favor of delay.

Against the whole trend of modern therapy we cannot accept the advice of one who, having made his reputation as a skin specialist, now undertakes to bring forth for the remedy of major surgical conditions a system of treatment which he says does not apply to skin cancers. He confesses (page 192) that the methods he urges "seem to have relatively little, if any, effect on cutaneous epithelioma, except in the later stages, where the disease has caused great ravages."

There are a considerable number of clinical illustrations given in proof of the value of the author's contentions. In view of the possibilities of errors in diagnosis and the well-known occasional resorption of cancers, we see nothing convincing in his cases, some of whom he himself says still have the tumors, and others of whom he says have died. The very dangerous trend of the book more than balances any good it may do.

BLAKISTON'S QUIZ COMPENDS. Potter's Compend of Materia Medica, Therapeutics and Prescription Writing, With Especial Reference to the Physiological Action of Drugs. Based on the Ninth Revision of the U. S. Pharmacopeia, Including Also Many Unofficial Remedies. By A. D. Bush, M.D., Professor of Physiology and Pharmacology, University of Southern California. Eighth Edition, Revised. Philadelphia: P. Blakiston's Son & Co. 1917. Price \$1.25 net.

The text of this edition has been thoroughly revised and brought into accord with the pharmacopoeia. Many new articles have been introduced and much obsolete matter has been eliminated. The number of editions issued is a proof of the favor with which it has been received.

EXPERIMENTAL PHARMACOLOGY. By Dennis E. Jackson, Ph.D., M.D. Associate Professor of Pharmacology, Washington University Medical School, St. Louis. With 390 Original Illustrations, Including 24 Full Page Color Plates. St. Louis: C. V. Mosby Company. 1917. Price \$4.

This is a very valuable guide to advanced laboratory workers in the testing of the properties of drugs on animals. Explicit directions for fitting up the laboratory are given and cuts of all the apparatus used in the experiments. Then, one by one, the important remedies used in therapeutics are taken up, and their action upon the living animal is demonstrated by intricate experiments, with tracings and other means of comparison.

Nothing is left to the imagination. The most minute details are described carefully and shown, if possible, in beautifully clear illustrations.

The publisher's work and the general make-up of the book are exceedingly attractive.

MARYLAND MEDICAL JOURNAL

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BALTIMORE, SEPTEMBER, 1917

MEDICAL STUDENTS AND THE WAR.

At the beginning of this colossal war English and French medical students volunteered or were drafted in such large numbers as almost to disrupt the medical schools. The ill-effect of this is now being realized in the great shortage of medical officers for the armies as well as for the civil population. In England the lack of physicians is so great that medical men by the hundreds are being sent over by our Government to supply their need. Now we have entered the conflict, and the burning question is, Are we going to repeat their shortsightedness or shall we profit by their experience? In 1904 there were 28,142 students enrolled in the medical colleges of this country, of whom 5747 graduated. In 1916-17 13,764 students matriculated, and 3379 received their diplomas. With an enormous increase in the population there has been a reduction of 50 per cent. in the number of those entering the medical schools, and about 40 per cent. fewer graduates. Even before our entrance into the war there was a scarcity of physicians, which threatened to become acute in a short time. With our advent into the war the demand for medical officers for the troops has become very great, and the scarcity of doctors for the civil population and the hospitals has already become acute.

As we do not know how long the war is going to last, it is of the greatest importance that an adequate supply of physicians shall continue. This can only be accomplished by keeping the medical students in their colleges until they are graduated and have been sufficiently trained for either civil or military practice. After the declaration of war communications were received by the dean of a medical school in this city from the Surgeon-General of the Army and Navy and from the Council of National Defense, urging that both medical and pre-medical students should not enlist, but should continue their studies. Surgeon-General Gorgas, in a letter dated April 10, says: "I think the proper policy for us to pursue is to encourage the students to remain in the medical school until they are graduated. They certainly can best assist the Army in this way."

On April 16 Surgeon-General Braisted writes as follows: "I wish to advise you that it is the policy of this bureau to discour-

age professors, instructors and students of medical colleges from connecting themselves with the services, and any co-operation possible will be extended to maintain the supply of young physicians for future demands, both service and civil."

Dr. Franklin H. Martin of the Council of National Defense also says: "National safety demands that medical schools continue in full operation during the period of war." Also, "We concur heartily in your opinion that it would be unwise to interrupt the course of students now in pre-medical work. We are advising students to remain in college."

On July 17 Brigadier-General Mann, Militia Bureau, writes: "I beg leave to inform you that the policy of the War Department is to discharge such students, in order that they may continue their studies, who are within two years of graduation."

Acting on the recommendation of these and other officials, students were discouraged from enlisting in the Army or Navy, and were advised to continue their work. It came, therefore, as a great and unpleasant surprise when no provision was made for their exemption in the Selective Draft.

Provost Marshal-General Crowder, indeed, states that he has seen no valid reason for exempting medical students from the draft. He also says that only one in fourteen are drafted. In regard to the first statement it seems to the writer that his outlook is very limited if he cannot see that a continuous supply of physicians is absolutely necessary for both civil and military service, and that this supply will be materially shut off if medical students are prevented from continuing their studies. His suggestion that they can get adequate training while in the Army is absurd. In regard to the proportion of students drafted, he is also in error. In one medical school in this city during the last session there were 180 men enrolled in the junior, sophomore and freshman classes, of whom 30, or one-sixth, have been drafted. Practically all medical students are within the draft age, and most of them are healthy, unmarried and have no one dependent on them; hence they are especially liable to be accepted for service.

In 1918, if every student in the senior class should be graduated, there would be about 2900 new physicians turned out; but 2500 would be probably a nearer estimate of the number, and this means a serious shortage in the regular supply.

In the interest of both the military services and of the civil population, we demand that a special law be passed by Congress exempting medical students from the Selective Draft, or that the Secretary of War furlough those who have been conscripted, in order that they may continue their studies.

Medical Items.

THE next examination of the National Board of Medical Examiners will be held in Chicago, October 10 to 18. The regular Corps of the Army and Navy may be entered by successful candidates without further professional examination, providing they meet the adaptability and physical requirements.

There will also be an examination in New York City in the early part of December.

THE Bureau of the Census is planning to prepare and publish a monograph on the "Mortality from Tuberculosis" covering the calendar year 1918. To make this work of greater value an endeavor is being made to obtain the co-operation of all physicians to the extent of carefully recording or supervising the statements of occupations upon the death certificates during that year.

More accurate and definite statements of the occupations of decedents should be written upon death certificates.

Until this is done mortality statistics by occupations will continue to be unsatisfactory.

DR. SAMUEL W. SHANNON has received a commission as first lieutenant in the Medical Officers' Reserve Corps of the Army, and has been called into active service.

DR. WILLIAM K. WHITE, who is connected with the staff of the University Hospital Unit, was recently sworn in as captain in the Medical Officers' Reserve Corps of the Army.

MARYLAND's first hospital train was sent to Washington July 21 to be inspected by members of the Medical Corps of the Army and of the War College.

The train was completed under the direction of the Maryland Preparedness and Survey Commission, according to plans prepared by Dr. Daniel Dunott, chief surgeon of the Western Maryland, Baltimore & Ohio and Pennsylvania railroads.

One car is fitted up as an operating-room and the other cars as wards.

CAPT. THOMAS R. CHAMBERS AND LIEUT. EDWARD D. ELLIS, Baltimore, have been appointed by Lieut.-Col. Henry Page, commanding the Medical Officers' Training Camp at

Fort Oglethorpe, Ga., members of the staff of the American Evacuation Hospital to be established in France.

UNEXPECTEDLY ordered to Anniston, Ala., with Brigadier-General Charles D. Gaither, Capt. William J. Coleman, assistant surgeon with the Fourth Regiment, M. N. G., was married August 16 to Miss Laura Chapline.

Captain Coleman has been a member of the medical department of the Maryland National Guard for a number of years, and served with the Fourth Regiment on the Mexican Border last summer.

At the invitation of Dr. Adolf Mayer of Baltimore the members of the Maryland Psychiatric Society attended a lecture on "War Neuroses" given by Dr. Thomas W. Salmon, New York, medical director of the National Committee for Mental Hygiene, July 26, at the Henry Phipps Psychiatric Clinic.

The lecture was illustrated by pictures obtained by Dr. Salmon while abroad studying conditions at the front.

DR. ARCHIBALD C. HARRISON has been appointed director of the Maryland University Hospital Unit.

THE Maryland Tuberculosis Association announces a conference in Baltimore, October 18 and 19, of representatives of North Atlantic States.

The General Assembly at its session next winter will be asked to make large additions to the State's equipment for dealing with this disease.

A local committee, of which Louis Hamman is chairman and H. Wirt Steel secretary, is arranging the conference.

DR. JOHN W. SANDERSON, who has been under treatment at the Maryland General Hospital for several weeks on account of injuries received in a fall, is reported convalescent.

THE first annual meeting of an association of medical societies of the Eastern Shore of Maryland, the Eastern Shore of Virginia and Delaware was held at Ocean City, Md., July 26.

The committee in charge of organizing the new association consisted of Drs. J. McFaddin Dick, Salisbury, chairman; Henry M. Lank-

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THE Federal Government has reclaimed Fort McHenry, which three years ago was loaned to Baltimore for a park, and will use it as a base hospital for the army. The old fort buildings will be remodeled and made available for this purpose, and the new immigration station buildings now nearing completion will also be used in the plans for the establishment of a large base hospital in Baltimore. The new buildings cost \$500,000, and include a modern equipped hospital building for the treatment of sick immigrants landing at the port of Baltimore. These buildings now, however, will be used solely for the Army.

DR. ALEXANDER MCCONACHIE has been operated on for appendicitis at the Church Home and Infirmary. His condition is reported as favorable.

DR. C. FRANK JONES, one of the health wardens of Baltimore, has been named by Commissioner John D. Blake as acting head of the division of communicable diseases, with the rank and pay of an assistant commissioner.

Dr. Jones takes the place of Dr. John F. Hogan, who temporarily becomes the first assistant to Dr. Blake.

DR. HARRY C. HOUCK has been appointed a substitute health warden for Baltimore.

GOVERNOR HARRINGTON has appointed Dr. Edward Bennett Matthews a member of the Maryland Council of Defense, to fill the vacancy caused by the death of Dr. William Bullock Clark.

Chairman Gray of the Maryland Council of Defense has appointed Dr. Matthews chairman of the Committee on Natural Resources and Highways.

THE War Department has announced the assignment of three contract surgeons of the United States Army to active duty under orders to report in person to the chief mustering officer of the National Guard at Baltimore to

ascertain whether any of the members have tuberculosis.

The surgeons so assigned are Wilbur Pledge Stubbs, John A. Leutscher and Harry McCarthy.

At a recent meeting of the Baltimore Committee of the Women's Homeopathic Base Hospital held at the Hotel Emerson, Dr. Marie Letitia Ingram read an address on the work which women physicians are doing in the war.

DR. JOSEPH FRANCE has been elected to the United States Senate from Maryland.

DEATHS

MAJOR CHARLES CLARENCE BILLINGSLEA, chief of the sanitation department at Camp Meade, Admiral Station, shot and killed himself while examining one of the new regulation army officers' 45-caliber revolvers, shortly before noon mess call August 16. The bullet entered the army surgeon's brain just above his right ear. Death was instantaneous.

That the fatality was accidental was the decision reached by a jury of five commissioned officers who were chosen by Colonel Kleine of the Tenth New York Infantry, ranking officer at Camp Meade, to make a thorough probe of the shooting.

Major Billingslea was 39 years old. His home was at Westminster, Md. Son of Dr. Charles and Clara Smith Billingslea, Major Billingslea was graduated in surgery at the University of Maryland, Baltimore, and was later commissioned in the United States Army. Fifteen years a member of the army, he had been in the Philippine Islands on three occasions and had served at Fort Meyer, Va., and in posts on the California coast. He was recently assigned to Camp Meade, where, associated with Major Proctor, he was doing splendid work.

WALTER J. SAUNDERS, M.D., Wyoming, Pa.; Baltimore University, 1891; aged 62; died at his home in West Wyoming, July 15

ALISON B. BUSH, M.D., Weston, W. Va.; College of Physicians and Surgeons, Baltimore, 1893; aged 51; a Fellow of the American Medical Association; died at his home June 30.

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THE CANCER CAMPAIGN QUATERNARY— THE PROBLEM—THE PUBLIC—THE PATIENT—THE PHYSICIAN.*

By WILLIAM SEAMAN BAINBRIDGE, *A.M., ScD., M.D., C.M.*,
New York City.

No dissenting voice, so far as I am aware, has been raised against the movement, now so substantially under way, to educate the general American public concerning cancer. For more than a decade, as my published statements attest, I have emphasized the need for enlightenment on the part of the layman with reference to this disease, of which so much negative and so little positive information is available. I have endeavored to impress upon the medical profession the importance of so conducting the campaign of education as to avoid arousing needless alarm in the public mind, and to obviate the dissemination of conflicting views, theoretical observations, and deluding hopes. I have consistently and persistently maintained that physicians should be educated primarily, laymen secondarily, and that pending the establishment of incontrovertible conclusions hypothetical matters should be discussed *in camera*, and so cautiously that the promulgation of erroneous, premature and misleading conceptions concerning any phase of the cancer problem would be reduced to a minimum.

The campaign of education has been under way long enough now for some estimate to be formed concerning the results, good, bad and indifferent, which it has yielded to date. It is time to ask ourselves whether the platform upon which we have been conducting the campaign has met the requirements, or whether it needs to be revamped in accordance with the results accomplished. We may well ask ourselves frankly, "Are we on the right road?" "Have we failed to notice and to point out any of the guide-posts along the highway?" "Have we misinterpreted any of the danger

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signals?" "Have we wandered into bypaths fraught with dangerous pitfalls for those whom we are supposed to lead?"

No one, perhaps, is in better position to answer these questions than is the surgeon whose field of activity brings him in contact with a large number of persons directly or indirectly concerned with malignant disease. No one is more frequently importuned for what the patient, or the patient's friends and family, consider the final word concerning this or that piece of information—or misinformation—gathered from the columns of the daily press, from the "popular medical lecture," from the club, or from the medical meeting which the public may attend at will. Over and over the surgeon is asked: "*Is cancer contagious?*" "*Should every little wart and mole, or every little lump and bump, be removed?*" "*Will I have cancer if I eat meat?*" "*Must I eat rice to prevent having cancer?*" "*Does persistent indigestion mean cancer of the stomach?*" and so on, according to the hobby of the particular author or lecturer under whose temporary tutelage the individual has passed and according to the peculiar psychological constitution of the said individual.

It has been said, in quite another connection, that "experiments have two great uses—a use in discovery and verification, and a use in tuition. They were long ago defined as the investigator's language addressed to Nature, to which she sends intelligible replies. These replies, however, usually reach the questioner in whispers too feeble for the public ear. But after the discoverer comes the teacher, whose function it is to exalt and modify the experiments of his predecessors as to render them fit for public presentation." In no field of investigation with which the physician is concerned may it be more truly said that Nature's replies to our questionings come "in whispers too feeble for the public ear"; in no field of educational endeavor is it more important that the teacher render the subject matter "fit for public presentation" than in this campaign of education concerning cancer. The reason is involved in the very complexity of the campaign. This must take into consideration the quaternary: The cancer *problem*, which, as all know, is full of complexities; the *public*, as a whole; the *patient*, as an individual; the *physician*, who is the one to deliver the message.

THE PROBLEM.

Ever since the inauguration, less than twenty years ago, of the scientific study of cancer, the questions connected with this malady have multiplied so rapidly that they have become merged into one great, complex and unsolved problem. The chief constituents of this mystifying whole are concerned with: (1) the *cause*; (2) the *diagnosis*; (3) the *prevention*; (4) the *cure*, of cancer. Each one of these at once introduces us to a labyrinthine tangle of conflicting opinions, and hence of uncertainty. The layman conducted into this maze, unless by a skilful leader, is sure to become confused and discomfited.

Cause.—One of the organizations concerned with the propaganda against cancer recently issued a circular entitled "Fighting Cancer with Facts." Unfortunately, the one great and all-important fact, the *cause* of cancer, is not in our possession.

Whatever may be our individual interpretation presented by experimentation or by clinical observation, we have *no* incontrovertible facts to give to the layman who seeks enlightenment concerning the cause of this disease. We may have some negative findings; we may assert positively that cancer is or is not due to any kind of a parasite, microscopic, ultra-microscopic, or macroscopic; we may persistently deny that diet, of whatever kind, is potent to initiate the malignant process; we may agree or disagree concerning the proposition that cancer is or may be inherited; and we may accept or decline the oft-repeated statement that cancer is local in its beginning, and not in any sense a constitutional disease.

No matter what position we may assume with regard to the etiology of cancer, an army of opposition may be marshalled against us, equipped with apparently just as invincible weapons as we possess; for, truth to tell, neither side is really fighting, so far as the cause is concerned, with the impregnable armor of fact. Neither side, therefore, can vanquish the other. Even though one side may marshal seventy-five of a hundred thousand rats and mice against seventy-five or a hundred human subjects, in a contest of theories, who can say that either mice or men have won a victory?

How soon the smoke of battle may clear away and leave us and our allies, mice or men, triumphant, nobody can say. We can but hope that this consummation devoutly to be wished may soon be fulfilled. In the meantime, let us continue, in the laboratory or in the clinic, to fight for the possession of facts which will clear up this fundamental question—the cause of cancer. Pending the successful culmination of these efforts, how shall we interpret to the public Nature's "whispers" which come in answer to our investigations into the beginnings of this puzzling disease?

A few years ago, when so much was being said within the medical profession and in the secular press concerning the contagiousness and infectiousness of cancer, many of us were constantly confronted with anxious queries along this line, and with the serious and unfortunate difficulties which arose in the care of patients with advanced cancer. We have not forgotten the urgent demands made by some of the radicals for the burning of clothing, bedding, and even houses in which patients with cancer had lived, nor have we forgotten the unwillingness and refusal of nurses and other attendants to take care of these unfortunates. This theory of the cause of cancer, like the poor, we have always with us, and this dread possibility that, after all, the disease may be transmitted from man to man, from animals to man, or even from plants to man, figures at times, in one way or another, in the literature concerning malignant disease. The theory has not been proved, nor has it been universally accepted or disproved.

What, then, is it safe to affirm in this connection in the promulgation of knowledge regarding cancer? All, it seems to me, that need be said is:

(1) That the contagiousness or infectiousness of cancer is far from proved, the evidence to support this theory being so incomplete and inconclusive that the public need have no concern regarding it.

(2) That the communication of cancer from man to man is so rare, if it really occurs at all, that it may be practically disregarded.

(3) That any relationship between cancer in animals and in plants to cancer in man, so far as the acquirement of the disease by man is concerned, is purely an academic question, an hypothesis so far from verification that even the "whisper" of it should not reach the public.

(4) That those members of the public in charge of or in contact with sufferers from cancer with external manifestations, or discharges of any kind, need at most take the same precautionary measures as would be adopted in the care of any ulcer or open septic wound.

(5) That in the care of patients with cancer there is much less danger to the attendant from any possible acquirement of cancer than there is of septic infection or blood poisoning from pus organisms.

Of all the theoretic ghosts that stalk through the realm of cancer, however, the veritable Banquo's Ghost, refusing to be downed, is the ancient constitutional theory of the origin of this disease. It followed close upon the Evil Eye, the Curse, and other primitive ideas of the cause of disease, and it looms more or less vividly upon the horizon, its vestments varying with the times or with the "spotlight" cast upon it. Hand in hand with this ghost goes another, just now—Heredity, an unintentional ally.

The combination is not an easy one to combat in the campaign of education, for a bewildering array of facts, figures and fiction have been collected by the supporters thereof. To be sure, the facts are not fundamental ones, the figures may be impugned as may all statistics, and the fiction is as interesting as any other fiction concerning this homely subject; the serious import thereof, however, has a bearing upon the treatment of the disease, as we shall see, and hence upon the campaign of education as applied to the layman. It is important, therefore, that a rational stand be taken concerning these theories of the origin of malignant growths by those who are earnestly endeavoring, without preconceived and biased views, to instruct the public in the matter of the eradication of this scourge. Is it not enough, then, to teach, in effect:

(1) That the hereditary and congenital acquirement of cancer are subjects which require much more study before any definite conclusions can be formed concerning them, and that, in the

light of our present knowledge, they hold no special element of alarm.

(2) That in cancer, as in all other disease, attention to diet, exercise and proper hygienic surroundings is of distinct value, aside from any consideration of the essential cause of the disease.

(3) That suggestions which are put forward from time to time regarding the eugenic, dietetic and other means of limiting cancer should not be accepted by the public until definitely endorsed by the consensus of expert opinion. Such consensus *does not exist* at present.

So far we have encountered only differences of opinion concerning the cause of cancer, but nothing that may be unqualifiedly pronounced a *fact*. What, more than mere hypothesis, may we say relative to this basic element of the great unknown? Is there nothing upon which all those who are interested in helping to eradicate this plague may earnestly unite, something which will materially aid in checking its ravages? Unfortunately, there seems to be no ground upon which all may stand so far as the *essential* cause of cancer is concerned. There are some dissenting voices, however feeble, with regard to the *predisposing causes* and the *local origin* of the disease; but the accumulated evidence, gathered from all over the world, from all manner of sources, from animal and other laboratory experiments, and from clinical observations so numerous as to seem to refute all opposing opinion, warrant at least the statements:

(1) That, notwithstanding the possibility of underlying general factors, cancer may, for all practical purposes, be at present regarded as local in its beginning.

(2) That prominent among the predisposing factors, for which one should be on guard, are: General lowered nutrition; chronic irritation and inflammation; repeated acute trauma; cicatricial tissue, such as lupus and other scars, and burns; benign tumors—warts, moles, nevi (birth-marks), etc.; also that changes occurring in the character of such tumors and tissues, as well as the occurrence of any abnormal discharge from any part of the body, especially if blood-stained, are to be regarded as suspicious.

(3) That some occupations, notably working in pitch, tar, paraffin, analin or soot, and with H-rays, if not safeguarded, are conducive to the production of cancer, presumably on account of the chronic irritation or inflammation caused.

(4) That the finding of any abnormal condition about the body should be taken as an indication for competent professional and not personal attention.

Prevention.—It goes without saying that so long as we have not determined the cause of cancer we cannot definitely say that any given course of action or state of being may be counted upon to prevent the development of the local condition which we recognize as cancer. From long observation, as we have just seen, it has been determined that certain factors predispose to the initiation of the malignant process, and we are justified in warning against

these factors, thereby placing the public on guard concerning them. We should not, however, be so zealous in our efforts to impress these predisposing factors as to be blind to other possibilities which may controvert our present stand. While busy with the problem of protective immunity, let us not brush aside as of no moment the proposition that heredity is a possible factor in the initiation of cancer, and therefore must be reckoned with in the prevention of the disease. But we need not (as some have done) become so imbued with the idea that heredity has been *proved* to play a part, as to advocate celibacy in those in whose person or family cancer is known to exist or to have occurred. Nor need we advocate the isolation of persons afflicted with cancer, or other extreme measures in keeping with the prevention of infectious or contagious diseases, because one school of cancer investigators persistently holds to the belief in the infectious nature of this disease. Let us continue to work, each in his or her own way, along lines of preference, looking to the solution of one or more of the enigmas and the ultimate complete analysis of the entire problem. But in the interim let us try to keep the public out of the investigation of the various theoretical and technical questions. Let us not do more than urge watchful waiting, along the lines indicated above, until decisive action is called for; but let us make it unmistakably clear that action, when needed, is the surest aid to the elimination of this malady, by the prevention of its occurrence or its eradication in its incipency.

Cure.—It has been urged by those who oppose the “cutting” of cancer, or who recommend the surgeon as a recourse of last resort, that the word *cure* is not applicable to cancer when the means employed are of a surgical nature. There is perhaps no more completely and ineradicably fixed delusion in the public mind than that cancer never is really cured, and that if it is cured it was not cancer. It is because of this idea, no doubt, that the public is always ready to accept on faith the latest therapeutic gallimaufry which is exploited. And yet the most tangible phase of the entire obscure problem of cancer concerns its cure. We come more nearly here to fighting cancer with facts than anywhere along the line. For such an accumulation of experience and observation is available to prove that cancer is cured by early and complete removal of the local manifestation which we call “the growth,” that this evidence would seem sufficient to convince even the most skeptical. And, forsooth, it would, were it not for the fact that this particular variety of skepticism is incompatible with the scientific attitude of suspended judgment pending proof. It has, moreover, kept alive the aforesaid constitutional theory of the origin of cancer, with various collateral theories concerning diet and habits of life. Out of these theories, quite naturally, have come various methods of treatment, ranging from Christian Science to Rice Regime.

THE PUBLIC.

It is particularly with regard to the question of the cure of cancer that the medical profession, as a whole and individually, should assume the responsibility of safeguarding the public from conflicting opinions, and the consequent lack of confidence in medical advice, with its concomitants, neglect, or the following of false gods. And yet there has been and still is a deplorable lack of unanimity in our views.

I have repeatedly had occasion to discuss the question of "cancer cures," and to deplore the fact that false hopes are constantly being aroused in the public mind by premature reports of "success" with this or that agent or method.

Radium is at present the storm-center of conflict in this regard. The public is told by one authority (perhaps not intentionally) that "radium, our newest therapeutic agent, is proving to be of the utmost value in the treatment of cancer of all kinds, whether operable or inoperable." By another the public is told that while this agent "will continue to be of value in the treatment of certain small, relatively benign, accessible cancers, * * * as yet no consistent benefits have been obtained in deeper tumors." On the other hand, reports have been published in medical journals (and the information appropriated by the public) of deep-seated cancers "cured" by radium, while other reports tend to show that radium, "even in large doses, and when administered by some of its greatest advocates, is by no means infallible in the superficial cases that it is stated to cure," but, it is added, has made such cases vastly worse.

The public, meanwhile, reads of the thousands spent for radium and radium products by one set of investigators, and of the doubt cast by another faction on the entire radium idea. One expert says: "Give me enough radium and I will cure every case of cancer"; another says, "Would that radium had never been discovered!" And the public loses faith alike in the advocate and the decrifier of this agent.

The same uncertainty confronts the public with regard to X-ray. "It cures"; "it should be used after operation in every case of cancer"; "it is of little or no benefit"; "it is positively harmful because it stimulates the growth of cancer"—these and many similar statements may be found in campaign literature or heard in campaign lectures.

As for other so-called cures—and I have reference here not to the agencies employed by the patent quack—the public no sooner rids its mind of the hope aroused by the advocates of one "new remedy" before another is foisted upon it by reputable members of the medical profession.

The fact that the public receives much of its medical information through the newspapers, "hunting for something dramatic for their columns," should tend to make the profession much more guarded than it sometimes is in making statements concerning cancer and its treatment. Careless phraseology, which to the initi-

ated is taken as intended, may be honestly misunderstood by the public, and for this reason physicians, on general principle, should avoid such phraseology in dealing with a subject concerning which they have assumed to educate the public, and concerning which the public, in consequence of the proffered education, considers it has a right to knowledge from this source. If a layman reads, for example, or hears, that "while radium *manifestly* (the italics are mine) *ought to replace surgery in many instances*, and while it does some of its best work in *curing cases which surgery has not the remotest hope of touching*, yet on the whole there remains a large place for radium combined with surgery," etc., he is fairly sure to conclude that the author of such a statement means that radium can and does cure at least some cases which surgery is powerless to benefit. Yet how many such cases can be presented? Are we fighting cancer with facts when we make such assertions, even among ourselves?

It must be confessed, however, that the public is not without blame in blocking the dissemination of useful information—or at least not harmful—concerning cancer. The intellectual proletariat may be excluded from this accusation, but those in high places in the world of letters are sometimes the gravest offenders. I have elsewhere directed attention to the unique and spectacular stand taken by one of the great editors of a few years ago with reference to "cures" for cancer. Editors of today, with seemingly no realization of the evil that may ensue, allow the appearance of columns of sensational matter concerning cancer calculated to mislead their readers. Some of this—much, perhaps—is traceable to errors of judgment on the part of the medical profession; but much of it emanates directly from the aforesaid high places in the world of letters. A notable instance may be cited in the lengthy and positive advocacy of "red clover tea" by a facile and popular writer of the day, whose means of expression reaches at once thousands more than our campaign literature may be expected to reach in months or perhaps years.

A part, therefore, of the campaign of education should be directed toward impressing upon the public that if the hundreds of earnest workers in laboratory and in clinic are unable to discover ways and means, other than surgical removal, for the cure of cancer, it is a foregone conclusion that traditional remedies, such as "red clover tea" and the thousand and one things that have been listed as cancer "cures," are to be considered time-wasters and their advocates false teachers.

Too much emphasis cannot be placed (and not enough has yet been given) by the disseminators of knowledge concerning cancer upon the fact that of the large number of "failures" to cure this disease by surgical means many may be charged to ignorance or neglect, or both, on the part of the patient, rather than to any inherent fallacy in the method of treatment. In this connection, unfortunately, the medical profession, in part, is not blameless, for there are still many who prefer to treat "relatively benign,"

superficial and accessible growths with caustics, electro-cautery, X-ray, radium, or some other non-surgical means. This being true, the task of impressing the public with the importance of the role they must play in the reduction of mortality statistics is rendered more complicated and needlessly difficult.

THE PATIENT.

In a previous communication* I endeavored to emphasize some of the difficulties encountered, from the patient's point of view, in the search for knowledge concerning and relief from cancer. These difficulties, so far as I am able to judge from my own experience and observation, have in no degree been lessened during the twelve months of campaigning which have elapsed since the appearance of this article, along with many others which appeared coincidentally over the country, all intended to emphasize some phase of the campaign of education concerning cancer.

It is doubtless true, as has been repeatedly stated, that the campaign of education has yielded results in the matter of causing more persons with pre-malignant and early malignant conditions to consult the surgeon, dermatologist, or family physician, and this, to be sure, is the prime motive of such a propaganda so far as the patient is concerned. But is it not possible to inculcate the idea that no chances are to be taken with these supposedly pre-cancerous warts, moles, etc.; that menstrual disorders, especially of middle life, should not be neglected; that bad teeth should be attended to before they have inaugurated a condition of chronic irritation in their vicinity, and that the various other predisposing factors should be borne in mind, without introducing the Mendelian theory of heredity to clinch our arguments, without telling the patient of the many things which recent experiments on hordes of animals have *not* proved—without, in short, clouding the issue with any of the debatable questions now before us? The patient need not be shown "cancers in plants" and to be told that these are similar to cancers in man, leaving the grotesque impression that cabbage, cauliflower, asparagus, or any other succulent and otherwise wholesome article of diet may be the host of a death-dealing disease, and that, if consumed, the host of the disease is changed from the vegetable to the consumer. Nor is it necessary to bring forward figures, mostly of ancient origin, to convince the patient that he must beware absolutely of a meat diet if he would escape cancer. Still less is there need for restricting the patient's diet in keeping with that of "far Cathay."

In short, once the patient has reached the point of consulting a medical adviser, the condition and not a theory is the paramount issue.

*"The Cancer Patient's Dilemma. A Plea for the Standardization of What the Public Should Be Taught in the Campaign of Education Concerning Cancer." *New York Medical Journal*, July 3, 1915. (The conclusions of this paper, under the title "Articles of Faith" concerning Cancer. A Platform Upon which to Unite in the Campaign of Education, were presented by the author during the four-day Cancer Educational Campaign, held under the Auspices of the Vermont State Medical Society, June 8-11, 1915.)

THE PHYSICIAN.

The second element of the four which, as I have said, are the chief constituents of the problem of cancer (cause, diagnosis, prevention, cure), so intimately concerns the last member of the cancer quaternary, the physician, that I have left it for further consideration in this connection.

I have repeatedly emphasized my belief in the necessity for beginning any crusade of education concerning cancer within the ranks of the medical profession. The reason for this is fourfold (if I may use another figure four), and is to be found, in tangible form, in the doctor himself.

So far as the campaign of education is concerned, physicians seem to fall into the following groups:

First, those who are so placed in their respective fields of action that they see very few cases of cancer, and for this reason are not so skilled in the diagnosis of this condition as others. Such practitioners are not confined to the rural districts, but may be found in smaller and larger cities as well. Inasmuch as, in the absence of dependable laboratory or other diagnostic tests applicable to the early stages of cancer, the recognition of the disease during these stages is entirely a matter of experience, physicians lacking this experience form the chief object of campaigning. If it is impossible for them to avail themselves of the large clinical material of the leading cities, through hospital internships, post-graduate courses or other avenues, then the duty should be made clear to them of referring all doubtful cases to those of larger experience.

Second, those who may be called medical optimists. Nothing is the matter with the patient of this type of physician—found everywhere—until direful illness is imminent. The tendency of these over-hopeful doctors is to pooh-pooh the early stage of practically all diseases. Cancer is certainly no exception. Warts, moles, lumps, bumps—all alike to him, are “nothing at all.” Menstrual irregularities are due to cold or exposure in young women, and to “the change of life” in those who are older. There is no digestive disturbance so persistent as to be inexplicable to him on a basis of improper diet, constipation, lack of exercise, or imagination. Such medical optimists are not the least difficult subjects for enlightenment in the campaign of education regarding cancer.

Third, those who, in contrast to the second class, may be called medical pessimists. They see in every lump or bump a corroding cancer, and in every menstrual disorder the necessity for a panhysterectomy. Needless alarm and mutilation are the inevitable results of such an attitude. Closer study of the individual case and keener analysis of signs and symptoms will obviate the difficulty in a large proportion of these cases. It is from such an angle that this particular class of physicians should be approached in the campaign of enlightenment.

Fourth, those who are not lacking in experience, who are neither optimists nor pessimists, and who constitute the remainder of the medical profession, to which the campaigners themselves belong. The difficulty here—and it is no inconsequent difficulty—is the lack of unanimity. We are endeavoring to teach *facts* about cancer, when we have not determined what constitutes fact, except with regard to a very limited number of the questions involved. None of us are infallible in the matter of diagnosis, but once the conclusion is reached that a given condition is malignant, the treatment should be instituted in accordance with the facts of accumulated experience. No amount of theorizing can or has disproved the truth of the conclusion that accumulated experience warrants radical surgical removal, from the earliest stage to that which may be advisedly pronounced irremovable.

Many cases have been cited in which the tampering methods of the first class of physicians, the inexperienced, have unwittingly led to disastrous delay. The same unfortunate results have been chronicled as the outcome of the "Oh, let it alone!" advice to the patient, who, perhaps, has come under the spell of the advocate of education regarding cancer, who has honestly sought the early advice recommended. The woman, then, with the "lump" in the breast, or the man with the "crack" in his lip, goes out from such a medical adviser saying, "I *thought* that lecturer about cancer was an alarmist. I am glad I went to see Dr. So-and-So, for I was really frightened until he told me it was nothing." Perhaps it was not anything; but perhaps it *was*. The consequence in the latter case will be just as the cancer campaign lecturer predicted it would be. And this state of affairs is perhaps more common, and certainly more distressing, than that which is the outcome of the pessimist's advice, bad as it is. Fear, dread, and perhaps nervous and psychic upsets on the part of the patient, unintentional neglect and avoidance on the part of friends and relatives of persons afflicted with cancer, are some of the results of the tendency to give a diagnosis of cancer too rashly. The diagnosis, if accepted, leads to treatment with the object of removal of the suspected lump or bump or other abnormality, by surgical means, by cautery, by radium, or other agency, according to the views of the physician consulted. In many instances, some of which I have cited elsewhere, unnecessary and mutilating operations have been performed as the result of this attitude on the part of the physician. The medical man who, lacking neither experience nor diagnostic skill, *denies* to his patient the benefit of the only method of treatment which has stood the test of time, namely, surgical removal, just as surely adds his quota to the list of failures as do physicians of any other class.

With the higher perceptive ability which an earnest and unified education should develop, the physician of the near future should be able to catch the faintest whispers from Nature and give them back to the waiting world with clarion-like reverberation.

THE VALUE OF THE PROPHYLACTIC ADMINISTRATION OF TYPHOID VACCINE, WITH A STUDY OF THE WIDAL REACTION.*

By J. Clement Clark, M.D.,

Superintendent Springfield State Hospital, Sykesville, Md.

It is not the purpose of this paper to enter into a discussion of the etiology, diagnosis, prognosis or treatment of typhoid fever, but to give you in as brief a manner as possible the results of the use, both from a prophylactic viewpoint as well as its effect upon the Widal reaction, of the typhoid vaccine in the Springfield State Hospital, Maryland, since 1911, during which time 3644 patients and employes have been inoculated, making a total of 10,932 separate injections.

As psychiatrists the most of us are too prone to give our observations upon psychiatric subjects only, and fail to add anything to general or preventive medicine, and I hope I may be pardoned this digression.

It is a well-known fact that where large numbers of people are quartered typhoid fever soon makes its appearance. This is especially true in army life and large institutions, especially in hospitals for the insane, many of the inmates of which are untidy, some drinking their own urine and eating their own feces. This hospital, located as it is in a rural district (typhoid fever being chiefly a rural disease), has not been exempt. Since 1903 each autumn would bring us from 10 to 30 cases among our nurses and patients, until in the spring of 1911, after consultation with the State Board of Health, it was decided to use the typhoid vaccine. Accordingly, 890 patients and employes were inoculated, making at that time one of the largest experiments in the use of the typhoid vaccine outside of the United States Army. At this time the small units were used; 125 million for the first injection, 250 million for the second and 500 million for the third, the injections being given 10 days apart. The vaccine was prepared by the Maryland State Board of Health, and consisted of a suspension of dead bacilli in a sterile normal salt solution, standardized by counting the bacilli. The temperature of each patient was taken before being inoculated, and the inoculations were given in the afternoon, the patients thereby resting all night. The reaction from this dose was slight, and all the patients were up the morning following the inoculations. Of course, all needles were sterilized and tincture of iodine painted over seat of injection. Not a single abscess occurred, and there were no bad effects observed. All patients in the institution were inoculated except those immune from previous attacks and those suffering from tubercu-

*Reprinted from Proceedings of the American Medico-Psychological Association, Seventy-second Annual Meeting, New Orleans, La., April 4-6, 1916.

losis, diseases of the vascular system or Bright's disease. None of the patients inoculated contracted the disease in 1911. Two cases, however, occurred early in 1912 in patients who had been inoculated. Thinking it might have been due to the small units used, the larger units were used in 1912, after Major Russell, of 250 million for the first dose, 500 million for the second and one billion for the third. All patients who had entered the hospital and all employees who had entered the service since the inoculations of 1911 were inoculated. The reactions from the larger units were no greater than in the smaller units, and the protection has been absolute. Not a single case of typhoid fever has occurred among the patients or employees since using the larger unit in 1912. All patients entering the institution since 1912 have been systematically inoculated, the larger unit being used. Since 1914 the sensitized vaccine has been used, the reaction of which is slightly less than the non-sensitized. Employees are also required to submit to it. As it is still uncertain how long the protection lasts, all the patients inoculated with the smaller unit in 1911 were re-inoculated with the larger unit this year (1915), with the exception of 50 for further observation as to the length of immunity. It would thus appear that the protection is good for three years, and possibly four, as there has not been a case of typhoid in the institution since 1912, among either patients or employees. It should be added that all known methods of prevention, such as boiling water, sterilizing milk, disinfecting stools, screening windows, sterilizing clothing, etc., had previously been tried, but still a few cases developed each autumn; also that sanitary conditions, as regards water and sewerage, etc., are the same now as they were before the inoculations, except that the hospital has been more crowded and thus more likely to have epidemics, containing now about 1400 patients, as against 900 when the inoculations were begun.

Along with the inoculations the Widal reactions have been made and recorded. Since 1896, when Widal and Grunbaum, each working independently of the other, applied the principle of agglutination, as previously recognized by Gruber and Bordet, to the diagnosis of typhoid fever, the Widal reaction, when present, has been considered by most clinicians as the last word in the diagnosis of this disease. A new phase in the diagnosis of typhoid has occurred. The results of our examinations, as well as others, show that a positive Widal reaction nearly always followed a prophylactic dose of typhoid vaccine.

Of the patients whose blood has been examined from time to time to ascertain the presence or absence of the Widal reaction, the 50 patients before mentioned, who have not been re-inoculated since 1911, were included with the rest. All of the 48-month and 50-month specimens belong to this group of patients.

In making the Widal test we use an old strain of bacteria which is known to be easily agglutinable. These are transferred from the agar slants to bouillon, and are used when 18 to 24 hours old.

The blood of the patient is collected in capillary beads, allowed to stand for a few hours until the serum separates. This serum is then diluted 1 to 25 and equal portion of it and the bouillon culture are mixed, thus making a dilution of 1 to 50. A hanging drop is then made in the usual manner and allowed to stand one hour, when it is examined and the result read. A control in which salt solution instead of serum is used is similarly prepared to guard against artificial clumping. Only the blood of patients who could give a clear history of never having had typhoid fever was examined. Blood was taken from patients at the end of 1 month, 6 months, 12 months, 24 months, 36 months and 48 months, respectively, with the following results:

	Positive.	Negative.
Of the 175 specimens taken at the end of one month.....	173	2
Of the 130 specimens taken at the end of six months.....	126	4
Of the 110 specimens taken at the end of twelve months.....	103	7
Of the 100 specimens taken at the end of twenty-four months.....	80	20
Of the 80 specimens taken at the end of thirty-six months.....	48	32
Of the 50 specimens taken at the end of forty-eight months.....	15	35

One specimen taken at the end of fifty months was positive.

From the above we would emphasize the fact that a positive Widal reaction in any person who has ever been inoculated with the typhoid vaccine is of no value in diagnosing typhoid fever. The only reliable way of ascertaining the cause of continued fever where typhoid is suspected is by the blood culture and a total and differential leukocyte count.

Major Russell's conclusions in his article published in the *Journal of the American Medical Association* are all borne out by the results of our experience at Springfield. The conclusions are:

(1) "That the inoculations are harmless in healthy persons is now well established." In our own cases not a single ill-effect has been discovered among the 3644 inoculated, over 1400 of whom have been under observation by our assistant physicians for a period of four years, many having received two inoculations.

(2) "That it confers almost absolute immunity against infection." Our typhoid rate has been reduced from 1 to 2 per cent. to nothing.

(3) "That the duration of immunity is not yet determined, but it is assuredly two and one-half years, and probably longer." Immunity has lasted among those inoculated in 1911, and who were not re-inoculated for at least four years.

(4) "That only in exceptional instances does its administration cause any appreciable degree of personal discomfort." None of our patients suffered any inconvenience.

(5) "That it apparently protects against the chronic bacillus carrier and is at present the only known means by which a person can be protected against typhoid under all conditions." Previously all known precautions had been tried, but still a few cases developed each fall.

(6) "That all persons whose professions or duties involve contact with the sick should be immunized." It is a well-established

lished fact that attendants and nurses are more liable to typhoid infection than those engaged in other occupations—eight times as liable, according to the statistics of the Massachusetts General Hospital.

(7) "That the general vaccination of the entire community is feasible, and could be done without interfering with the general sanitary improvements, and should be done where the typhoid rate is high." This is a safe and sane proposition. Considering the harmlessness and safety of the use of the typhoid vaccines, there is no reason why typhoid vaccination should not be compulsory, just as smallpox vaccination. Certainly every case of typhoid that is prevented lessens the liability of the infection of others, both by the possible contact and the various channels of transmission while sick, as well as the possibility of his becoming a typhoid carrier after convalescence.

Book Reviews.

COMMON DISEASES OF THE MALE URETHRA. Being a Course of Lectures Delivered at the London Hospital by Frank Kidd, M.B., F.R.C.S., Assistant Surgeon London Hospital (G. U. Department); Member of the Medical and Military Committees of the National Council for Combating Venereal Diseases. With an Additional Lecture on the Clinical Pathology of Urethritis, by Dr. Philip Panton, Clinical Pathologist, London Hospital. With Many Illustrations. Longmans, Green & Co.: London, New York, Bombay. 1917. Price \$1.75.

The above indicates that this little book represents some of the best of English thought and experience. It is written in the most fascinating way, as a great specialist would talk to a younger friend in the medical profession of the best way of treating the many varieties of this disease, its complications and imitations. No physician can read it without profit, and many will welcome it as an office handbook, so explicit is it in its directions.

Seventy illustrative cases, culled from thousands, are given in brief. The relations of the disease to marriage are discussed at length. It is evident from the book that the gonococcus has been found by the soldiers in recent famous campaigns to flourish on the continent. We fully recommend the book to all of our readers.

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles by Leading Members of the Medical Profession Throughout the World. Vol. II. Twenty-seventh Series. 1917. Philadelphia and London: J. B. Lippincott Company. Price \$2.

After some interesting cases of gout and infectious arthritis by Dr. Christian, we come upon a most instructive clinic by Dr. Bar-

ker on typhoid fever, typhoid excretors and typhoid carriers. There is a most originally expressed and readable paper on constipation and natural food by Dr. Walsh, abounding in striking propositions as to health improvement, and worth the perusal of every housewife interested in the nutrition of her family. The expected cropper of the mineral oil habitue is very well described by him. He holds that there is no trouble at all in managing constipation without medicine in 99 thin people out of 100. He has his doubts about the fat ones.

He says the United States Public Health Service found that, according to observations made in winter for 40 days, the aridity of atmosphere in a steam-heated, well-ventilated office room kept at 72 degrees was 23 per cent., the same as the average of Death Valley, California, during the summer, although the air outside had 82 per cent. average humidity. It is all good reading for evening when the wife is at leisure and wants instruction mingled with fun.

Among other articles is one by Dr. Shipley of Baltimore on the use of small, deep-skin grafts, beautifully illustrated. He believes it is the best method in use for filling up and healing old ulcers, such as those of the leg, in which city almshouses abound. Varicose, syphilitic, traumatic ulcers, old burns, even an old osteomyelitic sore, healed nicely.

DISEASES OF THE GENITO-URINARY ORGANS AND KIDNEY. By Robert Holmes Greene, M.D., Professor of Genito-Urinary Surgery, Medical Department of Fordham University, and Harlow Brooks, M.D., Professor of Clinical Medicine University and Bellevue Hospital Medical School. Fourth Edition. Thoroughly Revised. Philadelphia and London: W. B. Saunders Company. 1917. Price \$5.50.

The authors in this work have given a description of what seems to them the most important diseases of this tract of the body, with the medical and surgical treatment which they have found best. It has, therefore, that individualistic flavor which proves so attractive in some of our best textbooks. The descriptions are clear and leisurely, and the illustrations are most apt and helpful. The printer's work is very good.

It seems to us that the effort to give of these organs a combination view from both the surgical and the medical point is unwise, as one view is as much as the compass of such a volume will permit.

We question also whether the brief references to the corresponding organs in the female will be of any value to a practitioner or surgeon seeking light upon the treatment of a case, and the space might have been used better in the real interests of the treat-

tise. If the female organs are discussed at all, their relations and disorders demand for them a far more thorough consideration than the authors have given.

In the old book stores you may find single volumes entitled "The History of the World," but modern needs are for thorough descriptions of small fields of human knowledge. Even the general practitioner of medicine now needs intensive descriptions of well-narrowed subjects.

For a work such as the authors designed, it is to be again commended to the profession.

THE MEMOIRS OF A PHYSICIAN. Translated from the Russian of Vikenty Veressayew by Simon Linden. With an introduction and notes by Henry Pleasants, Jr., M.D. New York: A. Knopf. 1916. Cloth, \$1.50 net.

This book, which is to a large extent an exposition of the shortcomings of medicine, should be read by every intelligent man and woman. It is a story of a youth entering on the study of medicine with the greatest faith in its omnipotence, who gradually, through the course of time and experience, learns that medicine is not as infallible as he was prone to think. This led to skepticism, but after he had come into contact with the masters this spirit of distrust was dispelled to admiration at the apparent ease with which these master minds unravelled the mysteries of the sick body. Though there is much that the medical profession has still to squeeze from uncertainty to certainty, still what it has accomplished by patient and diligent effort is herein set forth. It is a vital work, and should prove very efficacious in educating the public in what to expect and what not to expect of the doctor.

MATERIA MEDICA AND THERAPEUTICS, INCLUDING PHARMACY AND PHARMACOLOGY. By Reynold Webb Wilcox, M.A., M.D., LL.D., D.C.L., President of the American College of Physicians; Professor of Medicine (retired) at the New York Post-Graduate Medical School and Hospital. Ninth edition, revised in accordance with the United States Pharmacopeia, IX, with index of symptoms and diseases. Philadelphia: P. Blakiston's Son & Co. 1917. Price, \$3.50 net.

The publication of the new pharmacopeia has necessitated the rewriting of the section on Pharmacy and Materia Medica and a thorough revision of the whole volume, which is limited to the official drugs and preparations. The work is divided into two

distinct portions—*Materia Medica* and *Pharmacy*, and *Pharmacology* and *Therapeutics*.

The advantages or disadvantages of this division, which requires the reader to look into two distant parts of the book for a complete discussion of any subject, we do not intend to discuss. The author has given us a very up-to-date and exceedingly clear treatment of each drug in a manner which perhaps makes it more easy for us to grasp the clinical use of the drug than would be possible if the somewhat unpractical aspects of its laboratory characteristics were thrust at the same time upon our attention.

A TEXTBOOK OF GENERAL BACTERIOLOGY. By Edwin O. Jordan, Ph.D., Professor of Bacteriology in the University of Chicago and in Rush Medical College. Fully illustrated. Fifth edition, thoroughly revised. Philadelphia and London: W. B. Saunders Company. 1916. Price \$3.25.

If any of our readers wishes to know modern bacteriology, he should buy this book. It is authoritative, concise, clear and very readable. There are very few authors who can make a deeply scientific subject like this clear to those who are not laboratory workers, unless they treat it in a superficial way. The author has done this difficult thing, preserving the scientific spirit throughout. There are extensive portions which the practitioner may read to and discuss with an intelligent wife beside the study table of an evening—a wife who is interested in the application of sanitary advances to the home and community, as many now are. About one-sixth of the book applies to the bacteriology of pantry, dairy and farm; the rest belongs to medicine proper. As an illustration of the manner in which this part is handled, we may take the discussion of diphtheria. Beginning with the history of the discovery of the bacillus, our author passes to the consideration of its morphology; its cultural characteristics; its resistance (to destruction); its action in the human body; animal inoculations; the diphtheria toxin; diphtheria antitoxin, its concentration and curative value; the results of antitoxin treatment; modes of infection; prophylaxis; mixed infections; pseudo-diphtheria bacilli; diagnosis; the Schick reaction.

The present edition has a new chapter on typhus fever, written in view of Servian war experiences, and other additions to bring it to date.

THE MEDICAL CLINICS OF NORTH AMERICA. July, 1917. Volume I, No. 1. Johns Hopkins Number. Published bi-monthly by W. B. Saunders Company. Philadelphia and London. Price, \$10 per year.

Our readers will remember that in reviewing the May issue of the *Medical Clinics of Chicago* we noted that that excellent journal

would merge into a new journal of clinics covering the great medical centers of America and that the first number would be devoted to work of the Johns Hopkins.

Although nowhere stated, the present volume is evidently the result of that merger. The same excellent style of make-up is preserved. The papers are perhaps fewer, several being given by the same clinician. They represent, of course, the latest advances in clinical study, and, like nearly all medical work nowadays, have to deal with very old and familiar diseases; diseases mainly which have wearied and baffled investigators and deadlocked therapeutics. Little by little laboratory investigation is driving wedges into the broad front of these chronic complaints, and presently we may expect a sudden discovery to nip a bit off. It is weary waiting for the therapists in the fighting trenches, who are interested in the cure of this or that crippled and tortured patient-friend, but the future is ever-promising of final triumph. Particularly interesting to the general physician are perhaps the articles on Postural Albuminuria, on Essential Hypertension, on Clinical Aspects of Hypertension, and on Milroy's Disease. The physician should know that high arterial tension is no longer in itself considered alarming. Milroy's Disease is an hereditary ailment which exhibits swelling of the legs, first painful, then painless and persistent. Of 97 individuals, in six generations, 22 had the trouble.

THE SURGICAL CLINICS OF CHICAGO. June, 1917. Volume I, Number 3. With 70 illustrations. Published bi-monthly. W. B. Saunders Company, Philadelphia and London. Price, per year, \$10.

The present issue of this well-known publication contains many papers of value upon which we have not space to comment. Those that appeal to us most strongly will indicate the general excellence of the whole. The operation described and illustrated by Dr. Andrews, for varicocele, seems a real solution of this distressing and prevalent deformity. The plaster and extension method of treatment for sciatica is deserving of attention, although it is not easy to convince the bitterly-experienced practitioner that this most treacherous and deceptive torment can surely be cut short in its career by any known therapy. Any treatment that will relieve the pain of chronic sciatica in ten days is worthy of respect, but the patient described had been affected "for months" (it would have been fairer to say how many), and we know that sciatica has a way of letting up at last of itself.

Having with us the enthusiastic Dr. Kelly, it is perhaps wise that we should see the other side of radio-therapy, as presented by Dr. Case, who is not at all enthusiastic in his elaborate discus-

sion of the roentgen and radium method, although he admits cures and recommends them in certain cases.

The V-shaped Hysterectomy for dysmenorrhea and leukorrhea seems a very clever and safe solution for this class of troubles, as neatly illustrated by Dr. Heaney.

Dr. Parker's treatment of bad burns by adhesive plaster strips and open plaster jacket doubtless prevents scarring, but we should hate to have to pull that sticking plaster (the ZO sort) off the edges of that wound every day or so. We *have* had burns that hurt when they were covered over tightly—at least the patients thought so—but Dr. Parker says his did not. One interesting statement is that after a time the pull toward contraction ceases of itself; so long resistance preserves motion.

MEDICAL CLINICS OF CHICAGO. May, 1917. Volume II, Number 6. Index Number. Published bi-monthly by W. B. Saunders Company, Philadelphia and London. Price, per year, \$8.

With this number this journal loses its local character and becomes merged into The Medical Clinics of North America, to be issued every other month in a handsome octavo volume of about 300 pages, devoted to the work of a single medical center. July will give work of Johns Hopkins. September will be Philadelphia. There will be New York, Boston and Chicago numbers.

This present number contains many interesting papers. There are several case-reports of jaundice—one a family type, of twenty-one years' duration, affecting the family for four generations—six out of seven brothers and sisters being icteric, and two out of three children of the patient. The patient was relieved of his jaundice and restored to good health by excision of the spleen.

There are instructive reports and discussions concerning syphilis of the lungs, pernicious anemia relieved by anti-syphilitic treatment, gonorrheal arthritis, tabes dorsalis, and acute nephritis after tonsillitis.

There is an apology by Dr. Hamill for alleged irreverent remarks in the January number; and an index.

DO YOU KNOW THAT—

Keeping healthy is a part of doing "your bit"?

Universal public health service is the duty of the nation?

Much valuable food material is diverted in the manufacture of alcoholic beverages?

The only good fly is the dead one?

Good health is the foundation of personal usefulness either in peace or in war?

He who is too busy to care for his health may have to take time to cure disease?

REPORT OF BOARD OF MEDICAL EXAMINERS OF MARYLAND.

QUESTIONS AT THE JUNE (1917) EXAMINATIONS.

CHEMISTRY.

Omit one question. Answer ten.

1. (a) State the properties of metals and name five (5) "heavy" metals. (b) Name three (3) univalent and three (3) bivalent metals.
2. Show by symbols the action of potassium on water and of zinc on nitric acid.
3. How may the presence of ammonium compounds be recognized in a solution containing other metals?
4. Why are Br. and I liberated from their salts when solutions of these salts are treated with chlorine water?
5. (a) How does an alcohol differ from an organic acid? (b) Give names and formulae of two (2) alcohols and two (2) organic acids.
6. Mention some chemical impurities in drinking water, and state their significance.
7. What is diacetic acid? Give qualitative test and state significance when present in the urine.
8. Why and in what form are alkalies administered in diabetic coma and in certain post-operative conditions accompanied by vomiting and marked prostration?
9. Give one method in detail for quantitative estimation of urea in urine, and state its clinical value.
10. What is peptone, and what other products accompany its formation?
11. What changes are produced by the pancreatic secretion upon proteids and fats in the food?

MATERIA MEDICA.

1. (a) Define and describe alkaloids. (b) Mention the alkaloids of *nux vomica*. (c) Why would you prescribe the salts of the alkaloids instead of the alkaloids themselves? (d) What is the principal alkaloid of *belladonna*, and its dose?
2. (a) What is formed if lime water and calomel are administered at the same time? (b) Give two derivatives of morphine used in medicine, with dose of each.
3. (a) How is opium obtained? (b) Name two alkaloids of opium and give dose of each.
4. (a) What is the official name and dose of tartar emetic? (b) What is the ordinary name of potassium nitrate? (c) Give official name and dose of Donovan's solution. (d) Write a prescription for nitrate of silver to be used in the eye of an infant.
5. Name the official preparations and doses of digitalis, *cascara sagrada*, *ipecac* and *strophanthus*.
6. Give the hypodermic dose of the following: Sulph. strychnine, sulph. morphine, apomorphine hydrochloride, nitroglycerine and pilocarpine hydrochlorate, sulph. atropine.
7. (a) What are antipyretics? (b) By what methods do they act? (c) Name some of the antipyretics.

8. (a) Name four diuretics and give dose of each. (b) Mention three diaphoretics and give doses.

9. Define a laxative, a saline purgative, a drastic purgative, a hydragogue purgative, and an example of each and dose.

10. How do styptics and hemostatics differ? Give two examples of each. Define astringent and name three mineral and three vegetable astringents with dose of each.

THERAPEUTICS.

1. Physiological action of turpentine. Therapy of terpinhydrate.

2. Therapy of *strophanthus*; wherein does it differ from *digitalis*?

3. Notable therapy and use of four salts of sodium: Bicarbonate, chloride, bromide, salicylate.

4. Therapy of senna; name two of its preparations least disagreeable and most effective.

5. Therapy of scilla; in what combination with other drugs is it important, and for what conditions?

6. Plumbum: External and internal therapy, and in what combination?

7. Write two prescriptions in official terms without abbreviation containing four ingredients; one for bronchitis with persistent cough and scant secretion, the other for bronchitis with abundant secretion.

8. *Aqua hydrogenii* dioxide; its therapy.

9. *Colchicum*, physiological action special therapy.

10. *Arsenium*, therapy and preferable preparations.

ANATOMY.

1. Describe upper third of femur, giving attachments of muscles.

2. Name and classify the joints of the lower extremity.

3. Name muscles of eyeball and eyelids and give their nerve supply.

4. Bound the mediastinum and name contents of superior mediastinal space.

5. Describe the pleura.

6. Name the coverings of the spinal cord and state at what level the spinal cord begins and ends.

7. In case of ligation of superficial femoral artery in Scarpa's triangle, how would collateral circulation be established?

8. Describe the quadriceps extensor muscle.

9. Give origin, course and termination of the saphenous veins.

10. Describe the pituitary body.

PRACTICE.

1. Define the following: Koplik's spots; Cheyne-Stokes breathing; Babinski's reflex; Graves' disease; auto-intoxication.

2. Describe the technique of a lumbar puncture, and of what diagnostic value is it?
3. Give the treatment of lues.
4. Give causes, symptoms, differential diagnosis and treatment of chronic interstitial nephritis.
5. What is meant by pulse pressure? What conditions would you suspect in a patient with a systolic blood pressure of 200 mm. or over?
6. Give symptoms and prophylaxis of typhus fever.
7. Give the causes, general symptoms and treatment of obstructive jaundice.
8. Give the etiology and treatment of acute cystitis.
9. Give comparative table of contents of cow's milk and women's milk. How would you modify cow's milk for a baby three months old?
10. Describe scabies. How would you treat a well-developed case?

PATHOLOGY.

Give pathology of:

1. Acute lymph adenitis of inguinal region.
2. Purpura hemorrhagica.
3. Acute tonsillitis.
4. Cholera infantum.
5. Tabes dorsalis.
6. Lobar pneumonia.
7. Catarrhal jaundice.
8. Gonorrheal conjunctivitis.
9. Arterio sclerosis.
10. Describe spirocheta pallida.

SURGERY.

1. Give symptoms and treatment of acute glaucoma.
2. What are the symptoms and treatment of acute inflammation of the mastoid?
3. Give symptoms and treatment of extra capsular fracture of the femur.
4. Name the varieties of dislocation of the shoulder joint. Give symptoms and treatment of the commonest form.
5. Give the differential diagnosis between scirrhus and non-malignant tumors of the breast. Briefly outline treatment for each condition.
6. What are the symptoms of strangulated inguinal hernia?
7. Describe briefly a typical case of acute empyema, giving all aids to diagnosis of said condition.
8. Give symptoms and treatment of gunshot and stab wounds of the abdominal wall involving the intestine.
9. Describe the clinical picture which a patient with peritonitis presents to the observer and give the physical signs on which a diagnosis of peritonitis is based.

10. Give causes and symptoms of ischemic contracture (Volkmann's). How may it be avoided?

OBSTETRICS.

1. Trace the fetal circulation and describe what changes occur at birth.
2. What is Baudelocque's diameter? How is it taken? What is its normal measurement?
3. In the description of a normal birth define the terms: (a) Engagement. (b) Internal rotation. (c) Disengagement. (d) External restitution.
4. In the examination of a pregnant woman, state where you would find the fetal heart in the several presentations and positions.
5. Describe the mechanism of the third stage of labor.
6. (a) Give treatment of ptyalism of pregnancy. (b) Give treatment of chorea gravidarum.
7. Give symptoms and treatment of incomplete abortion.
8. Give diagnosis and treatment of coccygodynia.
9. Give some of the causes of "one child sterility."
10. What conditions demand a hysterectomy?

PHYSIOLOGY.

1. (a) What is blood pressure? (b) What factors determine normal blood pressure? (c) Give method of taking blood pressure and the average in male and female.
2. (a) Give mechanism of respiration. (b) What is about the normal ratio of respiration to heart pulsation?
3. Define and give physiologic significance of dyspnea, dysphagia and apnea.
4. (a) What is meant by digestion? (b) Name the secretions of the alimentary tract, their reactions and functions.
5. State the physiologic functions of the liver.
6. (a) How are the proteids, (b) carbohydrates, (c) fats and (d) salts utilized in the process of metabolism?
7. (a) What are ptomaines, and how are they produced? (b) What proportion of nitrogenous and non-nitrogenous elements in the diet is most advantageous? (c) What becomes of the nitrogen ingested with the food?
8. (a) What post-mortem test should be applied to prove that air has entered the lungs of a supposedly stillborn child? (b) Give a method of producing artificial respiration.
9. Describe the arrangement of the sympathetic nervous system.
10. (a) Give composition, reaction, specific gravity and uses of blood. (b) What conditions retard, suspend or prevent the coagulation of blood? (c) What changes take place in the composition of the blood as it passes through the kidneys?

Summary of Results of Examination Held by the Board of Medical Examiners of Maryland, June 19, 20, 21 and 22, 1917.

No.		Anatomy	Surgery	Pathology	Obstetrics	Practice	Chemistry	Materia Medica	Therapeutics	Physiology	Total	Average
	COLLEGE OF GRADUATION.											
1	University of Maryland, '16.....	71	90	70	90	79	78	79	83	40	680	75
2	University of Maryland, '16.....	75	90	76	81	84	75	84	79	83	727	80
3	Johns Hopkins, '16.....	79	90	75	92	93	79	77	90	72	747	83
4	University of Maryland.....	82	..	..	..	..	75	92	..	87	..	..
5	University of Md. and Col. of P. and S., '17.....	79	86	84	79	95	75	88	74	88	738	82
6	Johns Hopkins, '17.....	77	77	82	66	84	85	70	85	82	698	77
7	University of Maryland, '17.....	88	91	80	66	94	70	97	83	97	755	83
8	Johns Hopkins, '17.....	80	78	82	65	93	80	90	70	88	726	80
9	University of Md. and Col. of P. & S., '16.....	84	75	64	67	95	75	93	70	79	702	78
10	Johns Hopkins Medical School, '15.....	62	84	80	63	79	75	68	79	62	652	72
11	University of Maryland, '17.....	76	91	75	82	86	75	80	64	79	708	78
12	University of Maryland, '16.....	96	84	81	93	91	75	97	80	92	789	87
13	Johns Hopkins, '17.....	88	89	80	87	94	80	90	83	94	785	87
14	University of Maryland, '17.....	82	90	82	92	88	98	88	75	90	785	87
15	Johns Hopkins, '17.....	65	82	67	75	93	80	75	84	80	701	77
16	Johns Hopkins Medical School, '17.....	90	75	76	75	83	85	75	86	79	724	80
17	Johns Hopkins Medical School, '17.....	81	86	75	80	92	100	92	86	90	782	86
18	University of Maryland, '17.....	77	85	80	84	83	60	86	75	79	709	78
19	University of Maryland.....	89	..	..	..	..	100	97	..	87	..	..
20	Jefferson Medical College, '17.....	75	91	78	78	90	65	80	80	80	717	79
21	University of Maryland, '17.....	68	92	81	88	90	75	50	70	75	689	76
22	University of Maryland, '17.....	80	91	91	87	91	100	86	92	94	812	90
23	Johns Hopkins, '17.....	79	92	90	92	87	90	75	75	75	755	83
24	Johns Hopkins, '17.....	75	74	74	73	83	75	78	80	65	677	75
25	University of Maryland, '17.....	66	75	85	88	86	75	67	75	61	678	75
26	Johns Hopkins, '17.....	82	95	78	95	95	95	96	92	96	824	91
27	College of Physicians and Surgeons, '16.....	75	..	..	..	..	75	86	..	81	..	..
28	Johns Hopkins Medical School, '16.....	73	79	76	79	89	68	85	77	80	706	78
29	Johns Hopkins, '17.....	76	90	90	83	91	85	78	90	83	766	85
30	Johns Hopkins Medical School.....	94	..	..	..	..	90	95	..	90	..	..
31	University of Maryland.....	74	..	..	..	..	75	89	..	76	..	..
32	Howard Medical School, Washington, '17.....	78	77	79	80	94	75	93	86	100	762	84
33	University of Maryland, '17.....	85	84	80	83	93	65	69	78	82	718	79
34	Johns Hopkins Medical School, '17.....	69	80	75	77	91	75	83	78	79	707	78
35	Johns Hopkins, '17.....	90	84	90	83	89	75	92	81	95	779	86
36	University of Maryland, '16.....	75	..	..	..	..	75	..	..	..	..	..
37	Jefferson Medical College, '16.....	91	91	78	88	94	75	93	80	80	770	85
38	University of Maryland.....	80	..	..	..	..	95	80	..	73	..	..
39	Johns Hopkins Medical School, '16.....	63	88	78	85	86	75	88	77	89	729	81
40	Johns Hopkins Medical School, '17.....	82	81	78	93	92	90	92	83	93	784	87
41	Johns Hopkins, '17.....	80	89	87	87	92	75	91	79	88	768	85
42	Johns Hopkins Medical School, '16.....	81	90	81	87	95	98	93	96	99	820	91
43	Johns Hopkins Medical School, '17.....	82	80	90	91	88	95	89	92	84	791	87
44	Johns Hopkins, '17.....	78	80	76	88	91	100	78	65	89	745	82
45	Johns Hopkins, '17.....	89	90	90	93	91	100	94	75	89	811	90
46	Failed to Appear.....	..	..	..	..	..	..	..	..	..	..	..
47	Johns Hopkins, '17.....	81	76	89	92	95	90	93	74	95	785	87
48	Johns Hopkins Medical School, '17.....	72	90	75	85	87	80	80	82	86	737	81
49	Johns Hopkins Medical School, '17.....	83	81	82	98	93	80	95	86	85	743	82
50	Johns Hopkins, '16.....	87	83	75	89	87	100	78	88	76	763	84
51	Johns Hopkins Medical School, '17.....	86	78	80	78	78	100	80	73	83	736	81
52	University of Maryland.....	88	..	..	..	..	95	90	..	82	..	..
53	Johns Hopkins Medical School, '17.....	75	79	75	79	85	85	50	72	78	678	85
54	University of Maryland, '16.....	84	88	60	92	75	75	78	72	81	705	78
55	Johns Hopkins Medical School, '16.....	79	..	84	75	..	..	..	..	..	..	..
56	Maryland Medical College, '04.....	49	66	..	..	..	..	..	..	69	..	..
57	Johns Hopkins Medical School.....	77	..	..	..	..	78	93	..	84	..	..
58	McHarry Medical College, Tennessee, '16.....	79	75	76	70	77	75	90	73	72	707	78
59	Loyola University, Chicago, '14.....	..	63	..	..	80	50	..	..	..	..	..
60	University of Maryland.....	81	..	..	..	..	66	65	..	50	..	..
61	University of Maryland.....	73	..	..	..	..	70	70	..	62	..	..
62	University of Maryland, '17.....	62	86	72	77	80	45	55	77	60	614	68
63	University of Maryland, '17.....	85	85	70	79	92	75	83	75	77	721	80
64	Johns Hopkins Medical School.....	68	..	..	..	..	80	78	..	88	..	..
65	Johns Hopkins Medical School, '17.....	85	85	89	85	94	98	75	80	82	773	85
66	University of Md. and Col. of P. and S.....	87	..	..	..	..	78	86	..	81	..	..
67	Jefferson Medical College, '17.....	79	87	75	75	90	66	94	86	93	745	83
68	University of Maryland, '17.....	75	90	78	69	82	40	52	49	69	604	67
69	Maryland Medical College, '13.....	27	..	..	..	..	50	..	..	71	..	..
70	Johns Hopkins Medical School, '17.....	98	85	95	74	94	98	75	77	87	783	87
71	Medical College of Virginia, '17.....	73	87	64	92	82	75	78	64	80	675	75
72	University of Maryland, '17.....	56	82	75	84	93	80	60	75	87	692	76
73	Johns Hopkins, '17.....	92	84	75	75	85	90	80	83	83	747	83
74	University of Maryland, '03.....	64	79	97	83	92	80	77	89	75	736	81
75	College of Physicians and Surgeons, '16.....	62	..	60	..	..	75	..	67	..	..	..
76	University of Maryland, '16.....	69	88	75	66	92	59	91	84	76	691	76
77	College of Physicians and Surgeons, '15.....	69	75	62	..	..	50	..	..	75	..	..
78	Johns Hopkins, '17.....	64	91	75	75	87	90	58	89	89	718	79
79	Johns Hopkins Medical School, '17.....	75	89	77	76	91	98	75	59	87	717	79

In the above summary an average of 75 is required of those participating in the examination for the first time in order to secure a license. Those who have failed are eligible to re-examination at the expiration of six months. They are then obliged to receive a rating of 75 in each branch in which they are re-examined before license can be issued. Under the Maryland laws, students who, at the end of their second year, have successfully passed their college examination in Anatomy, Chemistry, Materia Medica and Physiology, are entitled to examination by the Board of Medical Examiners in these branches. The ratings made by these students in the examination known as the "second-year examination" are carried forward and made part of the final examination when an average of 75 must be obtained to secure a license. We trust that this statement will make clear the apparently incomplete examination of certain participants.

MARYLAND MEDICAL JOURNAL

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BALTIMORE, OCTOBER, 1917

THE HOSPITAL INTERNE AND THE WAR.

AMONG the many difficulties that now confront the civil hospitals is that of securing internes. On the outbreak of the war it was stated by the authorities that medical men would not be accepted for service in the army who had not had at least one year of approved hospital work, and that internes would not be disturbed until they had completed their term of service in the hospital. Of course, many of those who had already served one or more years in the hospitals promptly applied for commissions in the Medical Reserve Corps, and were assigned to the training camps or to duty in this country or abroad. It was supposed that internes would be exempted from the selective draft, but that proved not to be the case, and they were drafted equally with others. In order to escape conscription those who were called in the first draft made haste to enter the Medical Reserve Corps, and many of them have already been assigned to service. The upshot of the matter is a serious shortage of residents in the hospitals and a lot of half-baked medical officers in the army. The hospitals have attempted to remedy the scarcity of internes by calling upon senior students, but, at best, this can only be partially successful, as such students will have their time fully occupied with their studies during eight months of the year. In order to relieve the hospitals, as well as to secure better prepared medical officers, the President has modified the regulations governing the discharge of internes from draft, but we fear too late to be of much service this year.

The new regulations are: "First—Hospital internes who are graduates of well-recognized medical colleges, who have not been called by a local board, may enlist in the Enlisted Reserve Corps

provided for by Section 55 of the national defense act, under regulations to be issued by the Surgeon-General, and if they are thereafter called by a local board they may be discharged on proper claim presented on the ground that they are in the military service of the United States.

"Second—A hospital interne who is a graduate of a well-recognized medical school, who has been called by a local board and physically examined and accepted, and by or in behalf of whom no claim for exemption or discharge is pending, and who has not been ordered to military duty, may apply to the Surgeon-General of the army to be ordered to report at once to a local board for military duty and thus be inducted into the military service of the United States, immediately thereupon to be discharged from the national army for the purpose of enlisting in the Enlisted Reserve Corps of the Medical Department. With every such request must be enclosed a copy of the order of the local board calling him to report for physical examination (Form 103), affidavit evidence of the status of the applicant as an interne and an engagement to enlist in the Enlisted Reserve Corps of the Medical Department.

Upon receipt of such application with the named enclosures the Surgeon-General will forward the case to the Adjutant-General with his recommendations. Thereupon the Adjutant-General may issue an order to such interne to report to his local board for military duty on a specified date, in person or by mail or telegraph, as seems most desirable. This order may issue regardless of the person's order of liability for military service. From and after the date so specified such person shall be in the military service of the United States. He shall not be sent by the local board to a mobilization camp, but shall remain awaiting the orders of the Adjutant-General of the army. The Adjutant-General may forthwith issue an order discharging such a person from the military service for the convenience of the Government.

"Three official copies of the discharge order should be sent at once by the Adjutant-General to the local board. Upon the receipt of these orders the local board should enter the name of the man discharged on Form 164A and forward Form 164A, together with two of the certified copies of the order of discharge, to the mobilization camp to which it furnishes men. The authorities at the mobilization camp will make the necessary entries to complete Form 164A, and will thereupon give the local board credit on its net quota for one drafted man."

Medical Items.

DRS. W. A. B. SELLMAN and J. H. Branham recently attended the meeting of the American Association of Gynecologists and Obstetricians at Newark, N. J.

THE following Maryland men, officers of the Medical Reserve Corps, have received their orders to report for duty:

To Admiral, Md., for duty in the cantonment laboratory, Lieut. J. R. Oliver, Baltimore.

To Camp Meade, Annapolis Junction, Md., for duty, Lieut. P. F. Sappington, Belair.

To Montgomery, Ala., for duty at the base hospital as chief of the surgical service, Lieut. D. P. Peters, Baltimore.

To Camp Kelly, South San Antonio, for duty with the 31st Aero Squadron, Lieut. Fred P. Weltner, Baltimore.

To Fort Benjamin Harrison, for instruction, Capt. Herbert B. Montgomery, Lanham.

To Fort Oglethorpe, for instruction, Capt. George E. Lewis, Rockville.

To Fort Benjamin Harrison, for instruction, Lieut. Herbert W. Rogers, Baltimore.

To Fort Oglethorpe, for instruction, Lieut. Lewis H. Howard, Baltimore.

To Camp Doniphan, Fort Sill, Okla., Lieut. P. R. Brown, Baltimore.

To Camp Sheridan, Montgomery, Ala., Lieut. Eugene H. Hayward, Baltimore.

To Camp Wadsworth, Spartanburg, S. C., Capt. Thomas B. Conrad, Chevy Chase.

To Fort Benjamin Harrison, for instruction, Lieut. Thomas B. Johnson, Frederick.

To Fort Oglethorpe, for a course of instruction, Major George A. Stewart, Lieuts. Everatt LeC. Cook, Charles M. Harmon, Charles L. Joslin, Baltimore; Frank M. Wilson, Cumberland; Philip J. Bean, Jarboesville; Edward C. J. Miller, Kitzmiller; Ira M. Zimmerman, Williamsport.

To Fort Riley, for instruction, Lieut. Walter C. Burket, Baltimore.

To Camp Doniphan, Fort Sill, Okla., as roentgenologist, Lieut. F. N. Hoffmeier, Hagerstown.

To Camp Meade, Annapolis Junction, Md., to duty at base hospital, Lieuts. E. F. Gott, A.

Shelley, H. N. Sisco, Baltimore; Winter R. Frantz, Cumberland; Thomas J. Coonan, Westminster.

To Fort Bayard, N. M., for duty, Lieut. Cranfield H. Douthirt, Baltimore.

DR. JOHN S. FULTON, who ranks as captain in the Medical Reserve Corps and is secretary of the Maryland State Board of Health, has been named on a board appointed by Major-General William C. Gorgas to prepare a medical and surgical history of American participation in the European War in five volumes. The board will gather the material and write the history. Several European countries have such histories in preparation, and the purpose is to have the work completed as soon after peace is restored as possible. It took 28 years to complete a six-volume work on the American Civil War. Others serving on the board with Captain Fulton will be Col. C. C. McCulloch and Major F. H. Garrison of the Army Medical Library.

LIEUT. LEON KENDALL FARGO, a member of the Medical Reserve Corps, has arrived safely in England.

DR. HENRY H. HAMPTON, formerly chief resident physician at the Church Home and Infirmary, has taken up his new duties as chief resident physician of the Hebrew Hospital, succeeding Dr. M. B. Levin, who has entered private practice.

DRS. WILLIAM ROBERT JOHNSON and Robert William Johnson, Baltimore, twin brothers, received commissions in the Medical Reserve Corps recently.

DR. THOMAS B. FUTCHER, visiting physician at Johns Hopkins Hospital, and member of the staff of the Medical School, will sail shortly for England, where he will be in charge of the Canadian Military Hospital at Orpington, Kent.

THE recently organized Eastern Shore Medical Society has elected Dr. J. McFadden Dick, Salisbury, president, and Dr. Eldridge E. Wolff, Cambridge, secretary-treasurer.

DR. ARTHUR M. SHIPLEY, Baltimore, professor of surgery at the University of Maryland, received his commission as chief of the surgical

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staff of the University of Maryland Base Hospital Unit, has been detached from the unit by order of the War Department, and ordered to report immediately to Camp Meade as chief surgeon and surgical instructor at the camp.

DR. EDGAR FAY has been appointed an assistant resident physician at Sydenham Hospital by Health Commissioner Blake.

DR. HANS HOHN, lately associated with the medical staff of Mercy Hospital, Baltimore, has accepted a post at St. Joseph's Hospital, Lancaster, Pa., and has assumed his duties at that institution.

DR. CARY B. GAMBLE has been appointed on the medical staff at Camp Meade, with the rank of major. Dr. Gamble will be stationed at the camp permanently, and his special duty will be to specialize in the treatment of diseases of the heart and blood vessels. Major Gamble will be assisted by a staff of physicians and some enlisted men.

THE examination of the Maryland National Guard was completed about September 1. Practically all of this work was done during the month of August. Dr. A. P. Herring was appointed by the War Department as contract surgeon in charge of this work, and was assisted by Dr. J. Percy Wade, superintendent of the Spring Grove State Hospital; Dr. R. P. Winterode, superintendent of the Crownsville State Hospital, and Dr. Lewis H. Gundry, Relay. The total number of men inspected was 5700. Out of that number 210 were examined, and 28 were recommended for rejection. The Fourth and Fifth Regiments were examined at their respective camps; the Field Hospital and the Coast Artillery were examined at the Richmond Street Armory; Troop A and Batteries A, B and C at the Pikesville Armory; Companies D and H of the First Regiment at Lake Montebello; Company B at Hagerstown; Company A at Frederick, and Company C at Cambridge. The remaining companies of the First Regiment have not been examined. Certificates of disability were made out on regular forms and forwarded through the proper channels, in order that the men might be promptly discharged. Dr. Herring and Dr. Wade have

been serving as members of the Medical Board under Form No. 484 A. G. O., and with them the major of each regiment. Maryland is the only State in which such an examination has been possible before the troops left for their cantonment.

DEATHS

HUBBARD L. GILLETTE, M.D., Washington, D. C.; Baltimore Medical College, 1889; aged 68; a member of the Medical Society of the District of Columbia; died at his home, May 12, from uremia.

THOMAS EDWARD CALLAHAN, M.D., Sanguache, Col.; Maryland Medical College, Baltimore, 1904; aged 43; a member of the Colorado State Medical Society; was shot and instantly killed in a fight in a saloon at Ortiz, N. M., August 11.

EDWARD ANDERSON, M.D., Rockville, Md.; University of Maryland, Baltimore, 1875; aged 76; a Fellow of the American Medical Association, and physician to the Montgomery County Almshouse; died at his home, August 15.

JOHN HERBERT EWING, M.D., Delmont, Pa.; College of Physicians and Surgeons, Baltimore, 1897; aged 44; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of Pennsylvania; president of the Delmont Board of Health; died at his home, August 27, from cerebral hemorrhage.

JAMES EDWARD SMITH, M.D., Shenandoah, Pa.; Maryland Medical College, Baltimore, 1907; aged 35; died at his home, August 22.

MAJOR CHARLES CLARENCE BILLINGSLEA, M. C., U. S. Army; University of Maryland, Baltimore, 1900; aged 39; a Fellow of the American Medical Association, who entered the Medical Corps, June 2, 1902, was made captain five years later, and was promoted to major in May, 1915; in charge of the sanitation work at Camp Meade, Annapolis Junction, Md.; was found dead in his tent at the cantonment camp, August 16, from the effects of an accidental gunshot wound of the head.

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HOPE FOR THE INSANE.

By William Held, M.D.,
Chicago.

It is a foregone conclusion that the entrance of a psychopathic patient into an insane asylum marks, with few exceptions, his start on the last leg of his earthly journey; that there he will complete his career.

So fastened has become this conviction in the minds of those who are concerned with the care of the insane that, sad to say, the asylum routine is not to treat the patient with any expectation of improvement or recovery, but to bend every energy toward supplying a place of safe retreat, amidst a mad citizenry, removed from the maddening crowd of the outside world.

Institutions where the inmates are really treated on the lines of progressive psychiatry and physiological therapy are exceedingly few, and then only to be found among the high-priced private sanitariums.

The activity of the ancient medicine men, who displayed great energy in the tortuous treatment of the mental patient, has been replaced by our modern apathy.

The diagnosis of insanity as a rule condemns the unfortunate patient automatically to a lifelong confinement. This attitude should be changed. Is commitment to an asylum and confinement there really the patient's last step, his last hope, or is there, for some of these patients at least, in the light of more recent developments, a light dawning, the light of restored mentality, an unclouding, a reawakening? Cannot many of these patients be benefited? Can the insane ever emerge from mental darkness into light? Is there hope for the insane?

These questions press themselves upon the minds of those who have witnessed the unusual results obtained with mental patients subjected to a new form of treatment. Many excellent works deal

minutely with internal secretion. Acute and chronic intoxications and auto-intoxications, as etiological factors of insanity, have been extensively dwelt upon.

The telling effect of glandular material upon the system, its ability to stimulate retarded functions, has been recognized. For instance, a subcutaneous injection of milk, taken from the breast of a woman whose lacteal secretions have almost ceased, resulted in the prompt re-establishment of the mammary gland functions with an abundant supply of milk.

We also recognize in many other phenomena the specific function of glands. We might mention the relation between testicles and the growth of beard in the male, or the growth of beard in the female where rudimentary testicular appendages are present (hermaphrodite-gynaecomstax).

The relation between mentality and gland secretion is known to be a fact, although it is not clearly understood.

The therapeutic measure of employing glandular products of animals has meritorious qualifications, but lacks the one great desideratum, absolute specificity; that is, the faculty to effect specifically the offending organ and thereby stimulate the same into renewed healthy activity. Glandular therapy has failed to influence the particular organ aimed at.

The idea of glandular therapy is that the functioning elements of the glands, the hormones, will furnish the system with the material which, due to interfered gland function, is not supplied in the proper quantity or quality. The ideal result of glandular extract administration would be to have the hormones contained in such therapeutic doses stimulate the diseased gland itself into renewed action.

This might be brought about by the characteristic affinity possessed by glands for elements of their own kind. For example, the thyroid is stimulated by thyroid hormones, the mammary glands by mammary, the ovaries by ovarian hormones or lutein, etc., all aiming to stimulate the particular organ whose function is retarded.

Dr. Sauer of the Hasenheide Clinic in Berlin, I believe, was the first one to call attention to intestinal hormones, the element which may be extracted and used to stimulate intestinal peristalsis.

Could we obtain a material which contains the particular hormones of each individual gland, the functioning element of the glands of the particular patient, and then be able to apply it directly to the gland whose function is interfered with, we would indeed be weaponed with a specific therapeutic agent.

The physiological function of every gland, in its minutest detail, is specific of such gland. Each gland has a function which is not shared in exactly the same manner by any other gland. This is true not only of the glands of internal secretion, but also of all

others. One kidney, for example, may take up the labor of its missing mate, but no other gland in the body can replace kidney function.

The therapeutic employment of gland products in certain disturbances of health seems sometimes to be followed by favorable reactions, and again in other individuals, afflicted to all appearance in the same manner, the same gland extracts fail entirely. Any successful results from this form of treatment are due to the efficiency of the extract to supply the economy with the elements which the diseased gland fails to furnish. Whatever protective mechanism is set in motion by the administration of glandular material, be it per mouth, transplantation, rectal or other means, the protective feature is due to supplying the system with elements which pathological glands fail to furnish, or to the stimulation of the offending gland into renewed activity. The latter is the most favorable result possible. The specific affinity of the glandular substance present in the system, for the administered material explains the renewed function, explains the result obtained.

The hormones of the administered ovarian extract furnish to the patient's system the material which under normal condition a healthy ovary would supply. But the therapeutically ingested ovarian material does not stimulate the diseased ovaries into renewed function. Pituitary extract and all other glandular preparations are sometimes able to replenish the system temporarily with the wanting element, but they do not restore the activities of the particular gland to the extent of ultimately making further administration of gland extract unnecessary.

These extracts are greatly changed chemically during the process of digestion and absorption, and when they reach the outer side of the intestinal wall they are vastly different, and for that reason often ineffective. They cannot be compared to the substance directly manufactured and discharged into the patient's blood stream from the gland by way of the regular channels.

Seriological work, conducted with many epileptics, demonstrates that the first noticeable improvement was in the patient's mental condition. Many physicians who have used anti-epileptic serum have independently made and reported this observation. The fact that autogenous serum and vaccines act after dissimilar preparations have failed is a hint that the same state of affairs may obtain in *glandular* therapy.

Once the possibility of successful specific autogenous glandular therapy became apparent by these and other similar considerations, it became merely a matter of setting ingenuity against all apparent obstacles. And this brings us to the subject of "semi-autogenous gland therapy," a term which I coined with the idea of characterizing the underlying facts, viz., partly autogenous gland treatment.

By the accepted rules of specific auto-therapy, what better, what more ideal method could be desired than the one which furnishes

us with a therapeutic agent, laden, energized, steeped and vibrating with the hormones of the glands which we intend to stimulate, and what other method would answer the purpose so well as to obtain the patient's serum, which has traversed every gland of his system?

A given patient's blood contains physiologically all the elements which are active in the particular patient's metabolism, be such healthy or pathological. The ordinary methods of inoculation with disease germs, and thereby transmitting disease, verify this contention as far as germ disease is concerned. But we are not concerned here with micro-organism, but with the infinitely more delicate products emanating from the most perfect laboratories of nature, viz., the glands, both those of internal secretion and others.

The many highly interesting deductions gained from experimental physiology have enabled us to observe many far-reaching effects. Gland extirpation, transplantation, therapeutic administration of glandular extracts, as well as the phenomena observed in diseases depending upon known interference of gland function—all these have long ago emphasized the intimate relation between glandular activity and metabolism, have demonstrated the direct connection between disturbed gland functioning and pathological metabolism.

These findings have been recorded years ago, verified frequently by many investigators, and recently greatly amplified. Records of these labors are contained in many works by the ablest physiologists, pathologists and bacteriologists of every country. No student can escape the conviction that by virtue of the continued normal function of the glandular system, controlled by the sympathetic nervous system, normal metabolism, that is, health and life, is maintained. By glandular activity the circulating blood is supplied with the required material, extracts, hormones, secretions, which, being carried to every part of the body, are absorbed there, and its saturating fluids endow the various organs with the functions with which these organs are endowed. These functions are automatic, being dependent upon the sympathetic nervous system.

So we recognize that ferments of glandular origin carry an absorption, digestion, regulate and repair the waste, secretion and excretion, inhibit cell growth; in short, maintain normal body functioning. We also recognize that inharmonious gland functioning causes atrophy or hypertrophy, depending upon the gland and the degree involved; we recognize inhibitory functions preventing unsymmetrical growth; we recognize under-development or over-growth controlled by glands, and indeed we shall awaken some day to the realization that cancer has its cause in glandular disease, preventing inhibition of cell growth, causing the cells to "run away," multiply and grow, without the restraining influence of one's inhibitory gland ferments.

By gland ferments poured into the blood stream we live. The most simple gland which receives most often recognition as an

active agent as a health-disturbing element is the tonsil. The backward child with diseased tonsils and adenoids is usually a mouth breather. Let these tonsils be removed, and we find often that the mental development, previously retarded, now becomes normal. It does not alter the underlying principle that there are those who break a lance against tonsil removal, nor that there are many who favor complete tonsilectomy whenever these organs are afflicted. The point for us is that the physician has recognized the tonsil's function as that of a beneficial gland, guarding the entrances to the fauces when healthy, and as detrimental to the system when diseased.

We have stopped short at such recognition. Instead of realizing the meaning which attaches to gland diseases, we have labeled these patients "mouth-breathers" and said that they were suffering from oxygen starvation. Both are facts, but the mental retardation is primarily the result of gland disease.

When blood serum containing the hormones of diseased glands are injected into animals, the healthy glandular system of such animal is attacked, with the result that the healthy gland at once is stimulated into projecting its protective faculties what we in other spheres would call "anti-bodies," but which here are Aberhalden reactions. The healthy gland defends itself automatically against the offending invading hormones. It readjusts itself to the newly-created condition after repeated stimulations and after repeated onslaughts acquires a state in which it easily overcomes the once effective invader.

Temporarily such gland suffers stress, but being richer in healthy hormones than the attacking minute pathological substances, it absorbs and renders harmless the latter. It soon learns to defend itself against the particular kind of hormones, and this protective faculty is enhanced by repeated attacks.

If, then, these so trained hormones of such glands be directed against the diseased glands in the system of the afflicted patient, the same will attack and stimulate it to normal action. The question, "Why not use normal glandular extracts against the pathological system?" is answered by the fact that normal extracts are not specifically trained to take care of the abnormal hormones, and therefore remain either neutralized, or are defeated by the abnormal gland secretion. Clinical experience also favors the use of the above described autogenous method. There is in the course of preparation a report of clinical cases demonstrating the merits of the above method.

These cases include feeble-mindedness, melancholia, dementia and mania. The auxiliary measures employed in the treatment of these cases, aside from the glandular treatment, consisted in removal of sources of reflex irritations, sigmoidoscopic stimulation, injection of nuclein and psycho-analysis.

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PRESIDENTIAL ADDRESS—THE ESTABLISHED VALUE OF RADIUM AS A THERAPEUTIC AGENT.*†

By Dr. W. H. B. Aikins,
Toronto, Canada.

DURING the last decade considerable advances have been made in the study of the therapeutics of radium, and the use of the rays has been extended with varying success to a great variety of conditions, some belonging to the domain of surgery and others to the province of internal medicine. These conditions include benign and malignant neoplasms in different parts of the body. The influence of radio-activity on the blood has also been found useful in the treatment of certain constitutional diseases. Additions are constantly being made to the already long list of conditions in which radium is proving itself a benefactor to humanity.

An accurate estimate of the value of any physical therapeutic agent is usually not arrived at until some considerable time has elapsed since its first introduction, and radium has been no exception to this general rule. During the first few years its advocates met with a considerable amount of opposition, and their claims were received with skepticism by the more conservative members of the medical profession. This conservative attitude in regard to new remedies obviously has its drawbacks, but it undoubtedly has the corresponding advantage that it tends to check their indiscriminate use at a time when they are still more or less in the experimental stage. At the present time, however, although a certain amount of skepticism in regard to the efficacy of radium treatment still persists in some quarters, it is gradually disappearing in view of the brilliant results which it has achieved in many cases, notably in cancer of the skin, fibroid growths of the uterus, hemorrhage of the uterus and as a palliative in inoperable cancer, and it is now generally agreed that in radium we possess a valuable adjunct to our therapeutic armory.

Several factors have contributed to bring radium treatment into disrepute, and to give the impression that the claims made for it by its advocates are not justified by facts. Failures, more especially in the early period, have often been due to the inferior quality of the preparations used, or to the fact that radium was not available in sufficient quantity. No one will deny that under certain circumstances radium has a harmful, rather than a beneficial effect, and if given in too small doses it may stimulate the growth of cancer instead of retarding it. On the other hand, the destructive action of too large doses may result in an irreparable damage to normal structures, and has been known to cause death. That failure may be due to insufficient dosage is evidenced by the fact that many

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cases unsuccessfully treated by small doses of radium subsequently respond satisfactorily to larger doses.

In view of the importance of accurate dosage and technique it is clear that, in order to obtain good results special training and prolonged experience are absolutely essential—a fact which too many people are prone to forget—and that in the hands of those who have not had an opportunity of acquiring such experience the treatment may be dangerous. In not a few cases disastrous results, which tend to discredit radium treatment, are not to be ascribed to it, but to the inexperience of the operator.

In estimating the value of radium treatment it should be borne in mind that its advocates do not claim that it supersedes surgery, but that it is a valuable adjunct to surgery in helping to prevent recurrence after operation, in rendering inoperable cases operable, and that it has proved itself to be one of the best palliatives we have in cases in which operation is impracticable, and in many of such cases has brought about apparent cure. This being so, it is obvious that in a large proportion of cases radium is used as a last resource, sometimes when the patients are in an almost moribund condition, and when all other measures have failed to give relief. This should therefore be taken into consideration in estimating the results. In such instances, even if we succeed only in alleviating the distressing symptoms and giving the patient a certain amount of comfort, the treatment will have justified itself, and radium will have accomplished what nothing else is capable of doing. The reputation of radium has too often suffered in the past, both at the hands of its friends and its enemies, exaggerated claims as to its efficacy being on the one hand based upon brilliant results in one or two apparently hopeless cases, whilst on the other hand it has been condemned altogether for isolated failures.

Character of the Rays.—Amongst the important factors which influence the treatment are the character of the rays, the method and degree of filtration, and the density of the tissue.

Analgesic Properties of Radium.—Radium possesses valuable analgesic properties. It relieves irritation of the skin, and is especially indicated in pruritus ani and other localized forms of pruritus. The analgesic effect persists for some considerable time, and has been found most useful in neuritis, neuralgia, and in the relief of symptoms in inoperable and hopeless cancer.

Selective Action of the Rays upon Cancer Cells.—In regard to the selective action of the rays upon cancer cells. Dr. Schmitz¹ of Chicago has given a clear description of the histological findings.

Dr. James Ewing² of New York has also enriched the literature regarding the histological changes which are to be observed under radium treatment.

Dr. Ransohoff³ points out that the changes invariably include obliteration of the blood vessels, which is an important factor in the cure of uterine fibroids by radium. He also quotes Keetman and Hartin, who have shown that radium is dependent for its action "on the denser substances in the nuclei of the cells." Rani-

sohoff says that this indicates that "the more closely the tissue approaches the embryonal type, the more amenable it will be to radium treatment," which accounts for the excellent results obtained in lymphosarcoma, and the comparatively poor ones in periosteal sarcoma and chondro-sarcoma.

Morson⁴ finds that in a considerable number of cases of cancer, absence of cancer cells can be demonstrated 14 days after beginning radium treatment, but that in more resistant cases the malignant cells may show only slight alteration at the end of two months. Burnham,⁵ in dealing with the apparently selective influence of radium on cancer cells, concludes that the radium rays have a "deleterious effect on all living tissue," but that while, when weakened by the action of radium, the diseased tissues disappear because they are unable to resist the normal protective forces of the body, the normal ones, when exposed to similar influences, persist, because these protective forces are constructed with the object of helping and protecting them.

Constructive Effect of Radium.—In addition to its destructive and selective action in regard to cancer cells, radium has a constructive effect, both on the tissues and on the system generally. Wickham and Degrais⁶ found that while the cancer cells undergo primary hypertrophy, and subsequently soften, disintegrate, and are probably ultimately eliminated by phagocytes, radium has a stimulating effect upon the connective tissue surrounding them, which is invaded by embryonic nuclei which separate and finally replace the groups of cancer cells.

Cancer of the Skin.—Observers everywhere are now agreed that radium is the ideal method of treatment in cutaneous cancer, both from the point of view of its selective destructive action on the cancer cells and its cosmetic results. In many instances it is preferable to surgery. This applies especially to epitheliomata of the face, in which operation may entail considerable disfigurement and mutilation. The results in some of the cases reported have been simply marvelous, and cases in every stage of the disease, even the most advanced, have yielded to radium treatment, sometimes proving refractory to all other methods.

An experience of several hundred cases has convinced me that no other agent can compare with radium for the treatment of these lesions. Small rodent ulcers respond magically, whilst more extensive cases, which are of several years' duration, and have resisted all sorts of therapeutic measures, including the X-rays, excision and various kinds of physical treatment, have also been favorably influenced by radium. Dr. Frank Simpson reports over 200 cases, which were all, with very few exceptions, cured by radium. He is of the opinion that the general rule that operable cases should be operated upon is not applicable to epithelioma of the skin, especially of the rodent ulcer type, in which radium is superior to surgery.

Dr. Russell Boggs⁷ refers to the high degree of malignancy often associated with the epithelioma of the lower lip, the almost

invariable involvement of the lymphatic glands, and the frequency of recurrence after operation. He emphasizes the importance of treatment of the lymphatics, in view of the frequency of their involvement. Abbé⁸ has successfully treated many cases.

All writers on the subject are agreed in emphasizing the importance of prophylactic treatment of pre-cancerous lesions, such as chronic abrasions and fissures of the lip, keratosis of the skin and leucoplakia of the tongue. Abbé and Delavan⁹ point out that before the advent of radium there was no known cure for leucoplakia of the tongue, which is now generally assumed to be a pre-cancerous lesion. They find that both leucoplakia of the tongue and keratosis of the skin readily respond to radium.

In addition to the treatment of pre-cancerous lesions, it is advisable to give prophylactic doses of radium at intervals after apparent cure of epithelioma, and to keep all cases under observation for a long period, with the object of detecting recurrences at an early stage.

Radium in Metastasis.—Dr. Lee¹⁰ does not agree with the statement of the Harvard Cancer Commission that metastatic cancer should never be treated by radium. He reports three cases: One of epithelioma of the wrist, with extensive metastatic deposits on the upper lip and adjacent region. Treatment resulted in healing of the lip, disappearance of the primary lesion of the wrist and great improvement in the general condition. In a case of epithelioma of the bridge of the nose with metastasis in the neck, there was great improvement, and in one of epithelioma of the lower lip with metastasis in the cervical glands and sternum the patient was regarded as clinically cured.

Cancer of the Mucous Membrane.—Epithelioma of the mucous membrane, such as those of the mouth, pharynx and larynx, is frequently associated with lymphatic involvement, and is much more difficult to influence by radium than that affecting the skin.

Parotid Tumors.—At a meeting of the American Association for Cancer Research at St. Louis in April, 1916, Dr. Richard Weil¹¹ reported a case of very extensive tumor of the parotid, involving the whole of the lower part of the right ear and of the neck behind the ear. It was shown microscopically to be an adenoid cystic epithelioma. Six weeks after treatment it had practically disappeared, and a year later there was no recurrence.

Tumors of the Brain.—Dr. Frazier¹² reports six cases of malignant tumors of the cerebellum, which he referred to Dr. Sawyer for radium treatment. Two died, one from fibro-sarcoma, the other from meningitis, and four are still living. In one of these cases, a deeply seated cerebellar tumor, the patient, a child of 10, shows some general improvement, but there is still marked cerebellar disturbances. A boy of 15, with tumor of the right cerebellar pontine angle, is now able to follow his former occupation, and is quite well, with the exception of blindness due to optic atrophy. A woman of 35 who was treated with radium seven

months ago is now able to walk by herself, and has gained in weight and strength. All the tumors were inoperable.

Carcinoma of the Breast.—Practically all writers are agreed that surgery is the treatment of election in operable cases, but prophylactic treatment by radium after operation is of great service in helping to prevent recurrence. In inoperable cases, or in those in which there are contra-indications to operation, radium will at least give considerable relief.

The "cross-fire" method of applying it increases its efficiency and intensity. Dr. R. T. Morris¹³ has had a varied experience with radium in cancer of the breast. In some of his cases recurrent carcinoma was uninfluenced by radium; in others the course of the disease was arrested, and a few are regarded as cured, some of them having remained without recurrence for seven or eight years.

Cancer of the Bladder and Prostate.—Up to the present comparatively few cases have been recorded in which radium has been used in the treatment of carcinoma of these regions. Pasteau and Degrais¹⁴ report some interesting cases in the successful treatment of cancer of the prostate. Schoenberger and Schapira¹⁵ report two cases of carcinoma of the bladder, in which the character of the growth was confirmed by microscopical examination of the pieces removed. In both cases a tube of radium was introduced into the bladder after supra-pubic cystotomy, remaining in place for 12 hours.

In the first case the tube, after removal from the bladder, was buried in a large metastatic growth in the right inguinal region. Two months later the bladder tumor had entirely disappeared and metastatic growth considerably diminished in size, but the patient subsequently died from pelvic metastasis. In the second case there was extensive carcinoma of the bladder and prostate. Three months later the mucosa of the bladder was apparently normal, and the prostate much reduced in size and of normal consistency, the patient having gained 26 pounds in weight.

Dr. Winfield Ayres,¹⁶ by using a very large cystoscope and a high concentration of radium, was able to give the very large total dose of 795 milligramme hours of radium. Cure was obtained in an inoperable cancer of the bladder, and seven months later there was no sign of recurrence. Young¹⁷ of Baltimore has described a highly specialized technique by means of which he has been able to treat cancer of the prostate and bladder with great accuracy and detail.

Carcinoma of the Uterus.—The uterus, chiefly on account of its accessibility, which allows of the radium being brought into direct contact with the growth, is very suitable for radium treatment. Ransohoff, who has had considerable experience in this class of case, refers to a patient who came under the observation of Rubens-Duval, suffering from inoperable cancer of the uterus. She died of intercurrent disease several years after undergoing the radium treatment, autopsy showing complete anatomical cure.

Cheron and Duval¹⁸ report a similar case. The patient died 15 months after radium treatment had resulted in apparent cure, and histological examination did not reveal a single cancer cell in any part of the body.

Dr. J. G. Clark¹⁹ reports 44 inoperable cases of carcinoma of the uterus, vagina or urethra, treated by a dose of 85 to 100 milligrammes of radium. No deaths could be ascribed to the treatment, the results of which were in many cases so remarkable as to be almost incredible. Newcomet²⁰ states that his experience indicates the advisability of the more general use of radium in uterine carcinoma, more especially after operation.

As regards persistence in cure in malignancy after radium, in 1911 Wichmann²¹ reported 30 cases, many of which had remained without recurrence for four years; Jungmann,²² one of the alani which has remained without recurrence for two and a half years; Haslund,²³ one which also has remained without recurrence for a like period. Dr. Benham Snow²⁴ states that in his experience radium has been uniformly successful in these cases.

Lymphosarcoma.—Kelly and Burnam report a series of 20 rapidly recurrent cases of lymphosarcoma of the neck, of which 13 to 65 per cent. were apparently cured. The total dose of radium varied from 441 to 2000 milligrammes, distributed over several hours repeated at intervals of weeks or months, the entire lymphatic system of the neck being irradiated in the more advanced cases. They conclude that in this class of case radium should invariably be substituted for surgery, and that if the treatment could always be undertaken in the early stage the proportion of recoveries might very possibly rise to 90 per cent.

Tumors of the Bone.—Bissell²⁵ reports two cases of sarcoma of the bone, one of which, affecting the femur, apparently completely recovered. Before treatment the X-ray picture showed a typical sarcoma, whilst the last taken resembled that of chronic periostitis.

Radium in Non-Malignant Conditions.—Many non-malignant conditions have responded well to radium, including uterine fibroids, nevi, warts, papillomata, keloids, tuberculosis of the skin, eczema, psoriasis, cervical adenitis, and various kinds of uterine hemorrhage.

Radium in X-Ray Burns of the Skin.—Abbé has reported several cases of epithelioma of the skin, due to X-ray burns, which were cured by radium. One of these, affecting the back of the hand, was cured by one application only, as long ago as 1903, and has remained without recurrence ever since. In a very extensive and long-standing case, in a maker of X-ray tubes, the growths on the hands fell off in 30 days, leaving a smooth, soft scar. There was no recurrence of the epitheliomata, but the patient subsequently died of general carcinomatosis. Abbé states that he has not had a single case in an early stage which has not yielded to radium. He uses the same dose as for ordinary papillomata or basal-celled epitheliomata.

Sinclair Tousey²⁶ has treated about 15 cases, and also his own

hands, from which all traces of growth had disappeared 10 weeks after the first application of radium, although they had been very severely affected.

Radium in Synovial Lesions.—Dr. Richard Sutton²⁷ of Kansas City reports two cases, both in women, one affecting the distal phalanx of the right index finger and the other the metacarpophalangeal joint of the index finger. In the first case the lesion became much smaller, and pain disappeared under radium, but it seems unlikely that the relief will be permanent. In the second case the lesion has entirely disappeared for five months, with the exception of a small central cicatrix.

Fibroids of the Uterus.—Abbé of New York was the first to use radium treatment in a case of fibroid of the uterus, which came under his observation in 1905. Cure resulted, and the patient has remained without recurrence for 12 years. The obliteration of the blood vessels, which follows the use of radium, has been found most useful in the treatment of this and other conditions causing uterine hemorrhage. Abbé, who has treated a large number of uterine fibroids, says that he is continually gaining more confidence in the use of larger doses and less frequent applications of radium.

Wickham, Degrais and Cheron also report satisfactory results. Of 120 cases, Cheron states that the menopause was brought on in 117, and the size of the tumor markedly reduced in 108. Dr. Kelly is of opinion that in fibroid of the uterus operation is indicated only in the case of urgent pressure symptoms or complications, such as lateral inflammation or ovarian cysts, and that in all other cases radium alone should be used. From his experience he concludes that in practically every case radium will stop menstruation, reduce the tumor in size and sometimes cause its complete disappearance. Abbé also concludes that its action in uterine fibroids is the most extraordinary of all the remarkable effects of radium. He regards radium as the method of election in all but pedunculated fibroids.

Radium has also been very successful in other varieties of uterine hemorrhage, chronic endometritis and cervicitis.

Nevus.—In certain types of nevi and birthmarks destructive doses of radium gives results superior to those from any other method of treatment, the scar being soft and flexible, and the skin ultimately becoming quite normal. The painlessness of the applications is a great advantage.

Keloid.—Abbé has had brilliant results from both true and false keloid, and his experience confirms the statement of Wickham that both are equally easy to cure. Inoperative keloids are removed by inducing in the first place a severe inflammatory reaction, the mass atrophying on subsidence of the inflammation, leaving a thin, flexible cicatrix.

Vernal Catarrh.—Abbé cured 10 cases of vernal catarrh, which had previously been unsuccessfully treated by the removal of hypertrophied masses, cauterization and caustics, by a 15-minute application of a tube of strong radium under the eyelid, the tube

being moved backwards and forwards, with a lead screen for the protection of the cornea. They had all been recurrent for many years, and have now remained cured for periods up to 10 years. Tousey has also had good results in vernal catarrh.

Lymphoid Tumors.—Delavan reports cure by radium of lymphoid tumors of the tongue, myeloid tumors of the jaw, laryngeal tumor and naso-pharyngeal fibromata. Bissell has had satisfactory results in inflammatory conditions, infections after trauma, etc., and in a case of streptococcal infection of the metatarsus after compound fracture of the second phalanx of the second toe, all evidence of infection had subsided a week after commencing treatment.

Exophthalmic Goitre.—Abbé first used radium successfully in exophthalmic goitre, and his favorable experience of its results has been confirmed by other writers. The experiments of Sir Victor Horsley²⁸ and Finzi²⁹ show that the most constant changes after radium affect the blood vessels. In refractory cases of exophthalmic goitre I have found the treatment to be of decided benefit, and my clinical experience shows that, when applied over the thyroid, the most penetrating rays of radium diminish the vascularity and reduce the secretion of the gland. I have recently reported seven successful cases, in which the application of radium was followed by relief of the symptoms and reduction in size of the thyroid.

Lupus Vulgaris and Lupus Erythematosus.—I have had good results from radium treatment in several cases of lupus vulgaris and other forms of tuberculosis of the skin. In these conditions, in view of the possibility of the existence of general systemic disease, it is important to keep the cases under observation for some considerable time, in order that relapses, if they occur, may be dealt with in an early stage. Cases of lupus erythematosus have been most favorably influenced by the proper use of radium rays.

Tuberculous Sinuses.—It is well recognized that considerable difficulty is frequently encountered in obtaining healing of sinuses persisting after removal of tuberculous cervical glands. In several cases radium treatment, carried out by the insertion of a powerful tube of radium directly into the sinus, has been most successful in bringing about destruction of the diseased tissue, and in stimulating development of healthy granulations, ultimately resulting in obliteration of the disease focus.

Tuberculous and Other Diseased Glands.—Radium has been used with varying success in malignant, non-malignant and tuberculous disease of the glands. Sarcomatous and lymphadenomatous glands respond much more rapidly than carcinomatous glands, which should, if possible, be surgically removed, as they rarely disappear or become quiescent under treatment. Inflammatory enlargement of glands promptly responds to radium.

Radium either alone or as an adjunct to vaccine treatment is often of considerable value in the treatment of tuberculous glands. It is advisable to give heavily screened exposures of 30 or more

hours' duration, endeavoring if possible to give "cross-fire" radiation. If the glands are caseating radium is of little use. In view of the frequency of involvement of the thoracic glands in these cases, it is advisable to include them in the irradiation.

In some cases enlargement of the glands is due to mixed infection, and under such circumstances the response to treatment may be irregular, some subsiding promptly, others slowly.

Radium in Military Surgery.—The stimulating and decongestive action of radium on the tissues has been shown by Barcat and Dominici, and in 1910 Chevrier showed that it accelerated the cicatrization of wounds. Wickham and others have shown that it diminishes the virulence of bacteria and their products. These characteristics of radium, together with its analgesic properties and beneficial effect in the restoration of motor function, have already proved of great value in the present war. The idea that the stimulating properties of radium might be of service in the treatment of infected wounds, deep sinuses, etc., arose from the observation of the stimulating effects of inadequate doses, and was first acted upon by Dr. Bissell of New York, who obtained very satisfactory results in cases which had proved resistant to surgery.

Drs. Cameron and Almquest³⁰ treated over 100 cases in military hospitals in England, and their experience indicates that whilst radium is not capable of preventing infection, it assists nature to resist it when present. In acute cases, in which defensive forces are active, they do not use radium unless there are indications that stimulation is required, and they add 50 micrograms of a soluble radium salt to normal saline solution, and use it as a continuous douche. They reserve tubes for sub-acute or chronic cases, and give in cases of severe shock intravenous injections of 50 to 100 micrograms in 2 cc. of normal saline solution. They give details of 47 cases, and are of opinion that radium increases the activity of the leucocytes, and is the most economical method of treating obstinate wounds which refuse to heal.

This brief and incomplete summary of the work which has been done during the last few years sufficiently indicates the extraordinary development which has taken place in the radio-therapy, a development which has been rendered possible by improvements in technique and our knowledge of the character of the rays, and which justifies us in the anticipation of continued progress in this direction in the future. Even in desperate and particularly moribund cases, which are hopeless from the point of view of cure, radium has in many instances added greatly to the comfort of the patient, and has proved itself one of the best palliative measures we possess.

As remarked by Kaye:³¹ The story of radium and its discovery is tinged with the spirit of romance. It is a story unequalled in the world's history as radium stands unequalled at present among the world's metals. Looking back, from the laboratory of Professor Curie down to a long vista of years, one can trace the gradual

evolution of a scientific certainty out of the half-formed and crude beliefs of the Middle Ages.

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THE EHRlich REMEDY IN THE TREATMENT OF SYPHILIS.*

By Judson Daland, M. D.,

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SALVARSAN is not only an important, but a permanent addition to our means of combating syphilis. In certain cases it produces results most brilliant and not otherwise attainable. This drug, though at first administered solely intramuscularly, is now given almost always intravenously.

The ordinary intravenous dose for an adult is 0.5 gram; for an adolescent, 0.3 to 0.4 gram, and for the newborn infant, 0.01 gram. In general paresis, cerebral syphilis and tabes dorsalis it is wiser to employ at first but 0.4 gram. Later this dose may be increased to 0.5 gram. In advanced diseases of the nervous and cardiovascular systems salvarsan is contraindicated. Nevertheless, in a few cases brilliant results have been secured by injecting 0.2 gram in sterile oil suspension into each gluteal muscle. I have administered as much as 0.5 or 0.6 gram intravenously to children seven or eight years of age, suffering from congenital syphilis, without toxicity and with therapeutic benefit. Intramuscularly, I have given 0.9 gram to a case of paresis without toxicity, and unfortunately without benefit. Almost all competent observers agree with Professor Ehrlich that salvarsan acts best when administered intravenously. The following method for the intravenous injection of salvarsan has proved satisfactory:

The 0.5 or 0.6 gram of salvarsan contained in the glass tube is placed in a sterile 25 c.c. graduate, to which are added 19 c.c.

*Reprinted from the *Transactions of the College of Physicians of Philadelphia*, 1911.

of hot *sterile* normal salt solution, and shaken vigorously until complete solution is secured. Under sterile conditions add, drop by drop, shaking vigorously each time, a 20 per cent. solution of sodium hydroxide until the base has been entirely precipitated; and this procedure continued until the precipitate is redissolved, care being taken that no *excess* of sodium hydroxide is added. The solution should be alkaline, transparent and pale sherry in color. It should be strained through gauze, added to 130 c.c. of sterile normal salt solution at a temperature of 110° F. and placed in a water bath so as to maintain this temperature. A modification of Weintraud's apparatus, made by George P. Pilling & Son of Philadelphia, is sterilized, and 40 c.c. of hot normal salt solution introduced into the glass reservoir and allowed to fill and warm the rubber tube, all air being expelled by allowing this solution to flow from the needle until but 10 c.c. remain in the reservoir. After the vein has been overdilated by a tourniquet, the needle is introduced in the direction of the blood current, the tourniquet immediately removed and the 10 c.c. of normal salt solution remaining in the reservoir is allowed to flow. If the solution flows freely and no swelling appears in the neighborhood of the vein, it demonstrates that the needle is within the vein. If the solution does not flow, or flows slowly, or there is slight swelling, it is evident that the needle is not within the vein, and necessitates exposure of the vein by dissection.

If the needle has been properly introduced, the arsenobenzol solution is then poured into the reservoir and allowed to flow into the vein at a rate not exceeding 20 c.c. per 60 seconds. The rate of flow is regulated by raising or lowering the glass reservoir. Whenever possible, a large vein should be selected, so that the arsenobenzol solution will be diluted by a large quantity of flowing blood, thereby preventing the local effect of the drug upon the vein, *i. e.*, acute phlebitis and thrombosis.

When the vein is deeply situated or invisible, or if the needle cannot be successfully introduced into the vein through the skin, the vein should be exposed by dissection; and a curved needle is safer and more convenient. The needle should be carefully held in its original position during the injection, so as to avoid displacement or injury to the vein. The vein, which is frequently quite movable, should be held securely in place by the lateral pressure of the index finger and thumb; and the patient should remain absolutely motionless, as even a slight movement of *any* part of the body may dislodge the needle from the lumen of the vein. When the solution of salvarsan has almost disappeared from the reservoir, the rubber tube should be compressed and 20 c.c. of hot normal salt solution introduced into the reservoir and allowed to flow slowly through the tube, needle and vein, following the arsenobenzol solution, until but 10 c.c. remain. If the cubic contents of the rubber tube is 10 c. c., the additional 10 c.c. will wash all the salvarsan from the needle

and vein, thus preventing local injury, as this solution is an intense chemical irritant. The needle is then withdrawn, pressure applied and adhesive plaster is the only dressing necessary.

As 0.6 gram of salvarsan is dissolved in 150 c.c. of hot distilled normal salt solution, each 25 c.c. is the equivalent of 0.1 gram of the drug, so that any dose less than the maximum may be easily calculated.

Complete sterility is absolutely necessary, and the intravenous injection is best given in a hospital with the aid of two assistants and a nurse. All apparatus and solutions should be sterilized immediately before the operation, and this is especially true of the physiological salt solution.

As a rule, the patient experiences no unpleasant sensations during the injection; but occasionally there is suffusion of the eyes and face, cardiac palpitation or irregularity, vertigo or nausea. The occurrence of any of these symptoms is an indication that the injection should be suspended. When the injection has been completed the patient should remain recumbent, make no muscular effort and remain under a physician's observation for at least half an hour. In a few cases soon after the injection one or more of the following symptoms may occur; headache, nausea, vomiting, muscular or intestinal cramps or diarrhea. The temperature occasionally rises to 100° or 102° F., with or without chills. Professor Ehrlich believes that most of these symptoms will be obviated if the normal salt solution is sterilized immediately before the operation, but my experience is opposed to this view.

The after-management of patients who have received salvarsan intravenously varies. All should remain in bed the first 24 hours. In syphilis of the nervous or cardiovascular system or viscera the patient should, in addition, remain in his room in bed or in a chair the second 24 hours. The third day he may move quietly about the hospital and afterward return home, and do no important mental or physical work for four days. These directions, so far as the second and third days are concerned, are of less importance and may be omitted in ordinary, uncomplicated cases of primary or secondary syphilis.

The advantages of the intravenous over all other methods of administering the Ehrlich remedy are that the full dose of the drug circulates in the blood at one time, and thereby exerts its maximum spirillicide action, with, as a rule, no discomfort to the patient. The dangers from the intravenous injection of the Ehrlich remedy are: (1) Emboli from air or blood clot; (2) syncope; (3) convulsions or collapse, especially in paresis and leucic cardiovascular disease.

The amount and rate of absorption of the drug is always uncertain when administered intramuscularly, and severe pain often occurs, followed by more or less infiltration, which is often exceedingly painful, and occasionally terminates in a sterile abscess from necrosis of the muscle. In marked chlorosis, anemia

or malnutrition these painful infiltrations may remain several weeks.

In disease of the nervous or cardiovascular system where doubt exists as to the extent of the disease or the wisdom of using salvarsan, and in asthenia and emaciation, the intramuscular injection is to be preferred. The dose and method of making the alkaline solution for the intramuscular method is the same as that used in the intravenous method, excepting that the total volume is but 20 c.c., one-half being injected into the right, and the other half into the left gluteal muscle, which muscles are the best for the purpose. The drug may be made into a neutral emulsion by the so-called Wechsleman method; or it may be suspended in paraffin or sterile olive oil; or made into an alkaline solution, which is more rapidly and surely absorbed and may be preferred, despite the fact that it causes more pain. In patients who are weak, or where caution is necessary, the drug may be administered as a sterile oil emulsion, prepared as follows:

Place the salvarsan in a sterile agate or glass mortar and add thereto, slowly, drop by drop, 8 or 9 c.c. of a recently-sterilized olive oil, which should be continuously and thoroughly rubbed into the powder by means of a pestle, so that ultimately an emulsion, cream-like in appearance, is secured. This emulsion is drawn into a sterile syringe, the skin over the site of the puncture sterilized, and the needle introduced into the center of the contracted gluteal muscle. As soon as the injection is completed the muscle should be relaxed and gentle massage applied and adhesive plaster placed over the puncture. Should pain or swelling occur, hot normal salt fomentations or hot magnesium sulphate may be applied, or, if necessary, morphine hypodermically.

In most cases the drug is erroneously introduced into the fat over the gluteal muscle in the neighborhood of the sciatic notch, thus interfering with absorptions, causing unnecessary pain and infiltration, and not infrequently inflammation of the sciatic nerve from the local chemical irritant action of the remedy.

Professor Ehrlich's hope, based upon animal experimentation, that salvarsan would sterilize a syphilitic by one dose, is no longer entertained, although *therapie sterilisans magna* is possible in certain cases of primary syphilis. In most cases, however, the dose should be repeated in one week; and in tertiary, para- and congenital syphilis additional doses are usually necessary. In primary syphilis the *Spirochetæ pallida* disappear from the chancre within 24 hours, as is true in animals in which a similar process has been induced experimentally. If the Wassermann reaction remains persistently negative for a period of two or more years, the patient may be viewed as being free from disease; if, however, the Wassermann reaction becomes strongly positive, an injection should be given at once and repeated until the serodiagnostic test becomes negative.

Naturally, the most favorable cases for treatment are the

recent fresh infections; and as soon as the spirochete or the Wassermann reaction demonstrates the existence of a chancre it should be excised if possible, with the idea of removing surgically as much of the infected material as possible, so that the remedy may address itself to the parasites existing in the lymphatics, blood and other parts of the body. After the administration of salvarsan usually within 24 hours no spirochetes are discoverable; and in 48 hours the chancre usually presents the appearance of a clean, punched-out ulcer, which rapidly heals.

In the ordinary forms of secondary syphilis two injections should be given at an interval of seven days; and four weeks later, if the Wassermann reaction is positive, a third injection, the endeavor being to secure a persistently negative serum reaction to syphilis.

Tertiary and congenital syphilis, as well as syphilis of the nervous system, may require several injections, and the patient should simultaneously receive the benefit of mercury and the iodides.

The contraindications to the use of the Ehrlich remedy are as follows: Advanced syphilitic myocarditis, advanced syphilitic disease of the aorta or coronary arteries or aneurysm, syphilitic aortic insufficiency, hemiplegia from ruptured syphilitic artery; advanced general paresis, advanced disseminated sclerosis, advanced tabes dorsalis, extreme debility or emaciation.

A number of deaths have followed the administration of the Ehrlich remedy, and the reports of the autopsies are most instructive. Some were moribund when injected; one overworked physically the day after the injection and died a cardiovascular death. Most of the deaths, however, were due to advanced syphilis of the blood vessels, more especially the aorta, with aortic insufficiency and syphilitic myocarditis. In about one-half of these cases these pathological conditions were not recognized during life. It is, therefore, evident that in all cases of long-standing syphilis a complete physical and general examination is necessary. One death occurred in a case of terminal diabetes mellitus, although benefit may be expected in early cases syphilitic in origin.

A complication following the administration of salvarsan, which had aroused much discussion, is the occurrence of lesions of the optic, auditory and other cranial and peripheral nerves. At present the preponderance of testimony is in favor of the supposition that these cases are examples of syphilitic relapses, and are not due to arsenobenzol. Relatively, these cases are few in number; but absolutely, they have been recently more frequently observed than in the past.

The nerve most commonly affected is the auditory, and next in frequency is the optic. The ophthalmoscopic appearances in general conform more closely to the picture of syphilis rather than arsenic. In the present imperfect state of our knowledge it is impossible to formulate a definite, positive opinion, but I

incline personally to the belief that, although most of these cases of cranial nerve involvement are syphilitic relapses, a small percentage are in some way induced by salvarsan. Some observers believe that salvarsan induces a predisposition to these complications. Prior to the administration of salvarsan certain of these nerves may be slightly syphilitic, but not sufficiently to cause signs or symptoms, and when the drug is injected may produce a transitory hyperemia and swelling, precisely as is observed in old, dry, inactive tertiary lesions of the skin. In view of the occasional involvement, more especially of the auditory and optic nerves, I believe that each case of advanced syphilis should be examined as to the integrity of these nerves before using the Ehrlich remedy. A complete physical and general examination, a urinalysis and a blood pressure observation should be made before injecting salvarsan. In hypertension or plethora a preliminary venesection is desirable. In cardiac weakness all physical and mental strain should be avoided, and the volume of the diluted arsenobenzol reduced to a minimum.

The indications for the use of the Ehrlich remedy are: (1) Cases refractory to mercury; (2) cases but partially improved by mercury; (3) cases showing an idiosyncrasy to mercury, whereby therapeutic inefficient doses produce mercurialism; (4) infective lesions occurring in prostitutes or the ignorant and careless; prompt treatment usually renders such patients non-infective within 24 hours; (5) the results in primary syphilis have been satisfactory, the local lesion usually healing promptly, as a rule, much more rapidly than from the use of mercury. In one case but a single injection was necessary. In secondary syphilis similarly good results were frequently obtained, mucous patches usually quickly disappearing; likewise ulcerations of the mouth, tongue and throat. The extreme pain and salivation accompanying these ulcerations disappeared in less than 24 hours.

The most brilliant results were obtained in certain cases of tertiary syphilis, as, for example, a gumma of the arm, which had resisted treatment for several months, in a few days showed healthy granulations and was soon healed. In a case of ulcerations of the face and neck, which had resisted mercury for nearly two years, in 24 hours showed marked hyperemia, and swelling, healthy granulations soon appeared, so that healing was accomplished in a few weeks. A case of osteomyelitis of the tibia, which had received temporary relief by two surgical operations, relapsed, despite the continued use of mercury, and for nearly a year suffered continuously from severe, almost unbearable pains, preventing sleep, which pains entirely disappeared in 14 hours after the injection of 0.6 gram of salvarsan intravenously and a similar quantity intramuscularly. When the last report was received, four months later, the pain had not returned. A similar result was observed in an old woman suffering from syphilitic caries of the cranium.

A brilliant result was observed in the case of a male, aged 50

years, almost moribund, profoundly emaciated and adynamic, with extreme thickening of the peripheral arteries and a thick psoriaform mass upon the right tibia. Under the influence of 0.4 gram of sterile oil emulsion of salvarsan introduced into the gluteal muscles he rapidly gained in strength and color, and in a few days the psoriaform mass became detached, leaving a healthy skin beneath, and in the course of a month a gain of 22 pounds in weight was secured. The results in several cases of general paresis have been, on the whole, unsatisfactory. Dr. Francis X. Dercum has observed one case of early paresis favorably influenced by salvarsan, and Dr. Isaac Leopold has made a similar observation.

The lancinating pains of tabes dorsalis are usually aggravated after the administration of salvarsan for from 24 to 48 hours, and then marked improvement or cessation of the pains usually occurs. Although in many cases of locomotor ataxia no especial benefit, apart from the cessation of pains or disappearance of crises, could be demonstrated in the comparatively short time that they were under observation, it is encouraging to note that in one case, which was under observation 13 months, while under the influence of salvarsan given intravenously, a W.+++ was replaced by a W.—, which endured for almost four months, and was replaced by a W.++, and after the last injection a negative phase was again secured. The behavior of the serum reaction for syphilis in this case, in my judgment, is evidence that the etiological factors, *i. e.*, the *Spirochaete pallida* and its toxins, have been controlled and the disease brought to a standstill. Symptomatically, there has been a disappearance of pains, improvement in general health and marked diminution of ataxia. The following symptoms remained unchanged: (1) Unequal pupils; (2) loss of knee-jerk; (3) loss of sexual power.

Dr. Francis X. Dercum has had similar results in a case under observation for a similar period of time, with the exception that his patient showed an extraordinary gain in muscular co-ordination.

It is impossible at present to formulate definitely the exact value of salvarsan in tabes dorsalis, but the remedy should be advised in cases showing a strongly positive Wassermann reaction, with the object of bringing the syphilitic process to a standstill by causing the destruction of the *Spirochaete pallida* and securing a negative serodiagnostic test for syphilis. If an incurable and progressive disease, such as locomotor ataxia, can be arrested, no more should be expected, as the nerve structures destroyed cannot be replaced.

Despite the fact that salvarsan is contraindicated in advanced paresis, advanced locomotor ataxia and syphilitic endarteritis, I have experimentally employed salvarsan in these cases, and have observed no ill-effect; but, on the contrary, in a few instances, have observed excellent results. If hypertension exists, it should be reduced, especially in cardiovascular disease, and the quantity

of the solution should be as small as possible, and introduced very slowly.

The results observed in congenital syphilitic choroiditis have, on the whole, been only partially satisfactory.

It is acknowledged that the only method by which syphilis can be diagnosticated, in the absence of signs or symptoms, is by the Wassermann reaction, and it is my belief that the presence of a positive serum reaction, in a case of syphilis where all symptoms and signs have disappeared, is evidence that there still exist *Spirocheta pallida* in numbers sufficient to make the anti-bodies that give a positive serum reaction, and, therefore, these patients are liable to relapses, or to the development later of serious diseases, such as paresis, tabes, aortic diseases, aneurysm, degeneration of the myocardium.

Experience has shown that it is sometimes difficult to maintain continuously a negative Wassermann reaction. Ordinarily, a negative serum reaction is secured, but in one, two or four months is replaced by a positive reaction if the disease is well advanced, the patient showing no signs or symptoms of syphilis and apparently in good health. Usually such cases should have received a second intravenous injection within one week, and later a third or fourth. Naturally, many of these patients disappear and desire no further advice, but in the present state of our knowledge it is urgently necessary that advanced syphilis should be treated vigorously not only with salvarsan, but also with mercury and the iodides, with the object of attacking the disease simultaneously from all sides, thereby securing the prompt disappearance of lesions and a permanent negative Wassermann reaction. Hitherto, in order to study the effect of salvarsan all cases of syphilis have been treated by the Ehrlich remedy alone.

Book Reviews.

THE ROENTGEN DIAGNOSIS OF DISEASES OF THE ALIMENTARY CANAL. By Russell D. Carman, M.D., Head of Section on Roentgenology, and Albert Miller, M.D., First Assistant in Section on Roentgenology, Division of Medicine, Mayo Clinic, Minnesota. With 504 Original Illustrations. Philadelphia and London: W. B. Saunders Company. 1917. Price \$6.

The title and origin will sell this book anywhere in the world. It contains particularly those things which have been verified in this famous clinic. The effort is after pure truth, and errors as well as successes have been recorded. This is one of the first, if not the first, collection into a single volume of the showings of the X-ray in this important field of general practice.

All earnest physicians will welcome the advent of exactness into this vital field of therapeutics and diagnosis where heretofore so much of speculation and inference has been necessary. The X-ray

will not settle everything, but it is very cheering to see with what clearness to even the inexperienced interpreter the shadowgraph reveals the causes of the most obscure abdominal complaints.

The authors are very conservative, sifting carefully the false from the true. The roentgenological diagnosis is, in their opinion, an art which can be acquired by the average intelligent physician. The dependence on the X-ray photograph for operative decisions is one, they say, which is open to great abuse, as the public cannot really understand the meaning of the photographic showings and is ready to accept any interpretation which the doctor may put upon them.

A number of teachings about constipation and bowel diseases which have been accepted by enthusiasts are doubted or wholly rejected by the authors.

It is curious to see the same old cycle that obtained in uterine studies repeated in those now before us. The same conclusion seems to be imminent, that it don't make much difference where a patient's stomach and bowels are, provided they are movable and freely permeable.

HABITS THAT HANDICAP. The Menace of Opium, Alcohol and Tobacco, and the Remedy. By Charles B. Towns. New York. The Century Co. 1917. Price, \$1.20 net.

Out of respect for its publishers we have tried to find merit in this little book; but after careful search of its pages we cannot see in it anything of value to the profession. It abounds in condemnation of about everything done by others than the author, a non-medical man, who has a valuable method of treatment which he says he gave a formula for in China in 1909, and announced in the same year to the medical world. As far as the present book shows, the remedy is unrevealed. We have no time to search the medical literature of 1909, and we cannot endorse a secret method for treatment of drug habits.

There is, curiously enough, an article on "The Relation of Alcohol to Disease, by Alexander Lambert, M.D., Visiting Physician to Bellevue Hospital; Professor of Clinical Medicine, Cornell University," bound at the end of this book as "Appendix," without the least mention on the title page or on the cover. Unless Dr. Lambert is too insignificant for mention, we would suggest that it would be more graceful for either Mr. Towns or the publishers to give him proper credit for his contribution, which presents some interesting statistics and has some value, although we cannot agree with all that he says, as, for instance, his statement that "alcoholics are notoriously untruthful. They cannot tell the truth even with assistance"; or, "all emotions of refinement disappear." There are exceptions. It appears (page 120) that he gave the "method" a satisfactory trial in hospital, but he also refrains from stating what it is.

MARYLAND MEDICAL JOURNAL

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BALTIMORE, NOVEMBER, 1917

THE CITY AND THE HOSPITALS.

In normal times most hospitals have difficulty in making both ends meet, but now with the cost of supplies of all kinds enormously increased, and hard to get at any price, the plight of the unendowed hospital is indeed distressing. Even the Johns Hopkins Hospital, one of the most highly endowed institutions for the care of the sick in the world, suffered a serious deficit during the past year. How to meet the increased cost with an income that is not proportionately augmented is, truly, a serious problem. Through private benefactions many hospitals have been established in this city at a large outlay of money, some of which have been serving the community for a great many years. They are well equipped and are highly efficient, but are without endowment and must depend upon the receipts from the patients and from a few largesses from the public for their support. Most of these hospitals have already increased their rates for private patients almost to the breaking point, but, in spite of this, the cost of maintenance has increased still faster. Moreover, patients have been educated to such a degree as to demand better and not diminished service from the hospitals, so that the economics that one can practice in his own home can not be put into effect in these institutions. With many of these hospitals the city has contracted, hitherto, to care for the indigent sick at the rate of 62 cents per diem for each patient, while the cost to the hospital is from \$1.50 to \$1.60 per diem for the same patient. This cost is not likely to diminish, but rather to increase, and the burden has become too great for the hospitals to bear. For years efforts have been made to induce the city administration to increase their appropriation for caring for the poor and unfortunate, but without avail. Recently a committee representing the hospitals caring for the city patients presented the matter again to the Board of Estimates and asked for relief. The hospitals can no longer bear this burden, and the city will have to increase the per diem allowance for patients or it will have to establish a hospital of its own within the city limits.

Medical Items.

THE following Marylanders have received orders to report for duty:

To American University, Washington, Second Regiment of Engineers, Lieut. F. H. Herman, Baltimore.

To Camp Devens, Ayer, Mass., Lieut. G. B. Wislocki, Baltimore.

To Camp Meade, Annapolis Junction, Md., for duty, Lieuts. J. H. Truitt, Bowie; F. O. Miller, Ellicott City, and W. H. Kable, Woodboro.

To Camp MacArthur, Waco, Tex., from New York Neurological Institute, New York, and report in person to commanding general and to commanding officer base hospital, for the purpose of making examination in his specialty, Lieut. George H. Preston, Baltimore.

To Camp Sheridan, Montgomery, Ala., from Boston Psychopathic Hospital, Boston, and report in person to the commanding general, and to the commanding officer base hospital, for the purpose of making examination in his specialty, Lieut. Milford Levy, Baltimore.

To Fort Benjamin Harrison, for a course of instruction, Capt. Compton Wilson, Friendship.

To Fort Oglethorpe, for a course of instruction, Capt. Henry R. Carter, Jr., Lieuts. James S. Akehurst, Robert G. Fuller, William R. Geraghty, George H. Reinhardt, Harry C. Schmeisser, David Silberman, Daniel C. W. Smith, Horace B. Titlow, Baltimore; Alexander McC. Stevens, Easton; Oscar H. McNemar, Edenton; Richard E. Yellott, Fallston; Charles L. Magruder, New Market; Samuel J. Price, Queenstown, and Joseph W. Long, Walkersville.

To Camp Meade, Annapolis Junction, Md., for duty as tuberculosis specialist and assistant to the Army Medical Staff, Capt. Gordon Wilson, Baltimore.

To Fort Benjamin Harrison for instruction, Lieut. Frederick W. Wastell, Jr., Harbor Beach.

To Walter Reed General Hospital, from Fort Myer, Va., for a course of instruction in tuberculosis examinations, Lieut. Charles W. Rauschenbach, Baltimore.

To Washington, D. C., and report in person to the Surgeon-General of the Army for duty in the section of surgery of the head, Major James Bordley, Jr., Baltimore.

Par. 80, War Dept., June 2, 1917, so much as relates to Major John A. Clark, Takoma Park, is revoked.

To Camp Meade, Annapolis Junction, Md., for duty, Capt. Charles H. Conley, Frederick; Lieut. A. W. Reier, Baltimore.

To Deming, N. M. Camp Cody, as assistant to the care of cardio-vascular cases, Capt. H. R. Carter, Baltimore.

To Fort Oglethorpe for instruction, Lieuts. W. W. Anderson, Everett LeC. Cook, Baltimore; George W. Bishop, Govans.

To Fort Riley for duty, Capt. Albert W. Metcalf, Jr., Fort Washington.

To Neurological School, University of Pennsylvania, Philadelphia, for four weeks on intensive training in brain surgery, Major F. Martin, Baltimore.

To New York, N. Y., Rockefeller Institute, Major G. A. Stewart, Baltimore.

To St. Elizabeth Hospital, Washington, D. C., for a course of study in his specialty, Capt. Daniel D. V. Stuart, Jr., Baltimore.

To return to inactive list of Medical Reserve Corps from School of Roentgenology, Johns Hopkins Hospital, Baltimore, Lieut. John Evans, Baltimore.

Honorably discharged, Lieut. Harry H. Johnson, Baltimore.

To Camp Dodge, Des Moines, Iowa, for temporary duty, Lieut. Thomas N. Toomey, Baltimore.

To Camp Sheridan, Montgomery, Ala., Thirty-Seventh Division, for duty as member of a board of medical officers for tuberculosis examination, from Fort Myer, Va., Lieuts. Algeron D. Atkinson, for duty in the division of plastic and oral surgery, section of surgery of the head, from Fort Benjamin Harrison, Herbert W. Rogers, Baltimore.

To Camp Wheeler, Macon, Ga., for duty with ambulance companies, from Fort Oglethorpe, Lieut. Charles L. Magruder, New Market.

To Fort McHenry, Md., for duty as acting medical chief of General Hospital No. 2, Capt. Joseph A. Chatard, Baltimore.

To Fort Oglethorpe, for instruction, Lieuts. Julio R. Rolenson, George P. Ross, Leo F. Steindler, Baltimore.

To inactive list of Medical Reserve Corps, Lieut. John T. King, Jr., Baltimore.

To report by wire to the commanding general Southern Department, for assignment to duty, Lieut. Francis O. Barrett, Baltimore.

To Washington, D. C., for duty in the food section, Lieut. Albert T. Shohl, Baltimore.

To Washington University, St. Louis, for

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three weeks' intensive training, Lieut. Fred Rankin, Baltimore.

DR. FRANK MARTIN and Dr. William H. Smith, who are on the staff of the University of Maryland Base Hospital Unit, have left for Philadelphia, where they expect to review the study of brain surgery, preparatory to going to France with the unit.

DR. THOMAS B. FUTCHER, Johns Hopkins Hospital, will sail shortly for England, where he will be in charge of the Canadian Military Hospital at Orpington, Kent. Although Dr. Futch has been living in Baltimore for many years, he is a British subject, being a Canadian by birth. He has been commissioned a lieutenant-colonel in the Canadian Expeditionary Force.

MISS MARY L. KELLY, assistant superintendent of nurses of the Health Department of Baltimore, has been appointed assistant bacteriologist of the health department.

DR. WRIGHT S. SUDLER has been appointed one of the health officers of Baltimore county, vice Dr. William E. McClanahan, Highlandtown, who has received a commission as captain in the Medical Reserve Corps.

DR. HARRY F. SHIPLEY, Granite, was seriously injured September 13 by the overturning of his automobile near Gwynn Oak; he sustained a fracture of the clavicle and two ribs.

THE men who will form the Medical Corps attached to the 115th (Maryland's Own) Regiment, now stationed at Anniston, Ala., have been selected from the three old regiments and are under the command of Major Frederick H. Vinup. His staff is composed of Capt. William J. Coleman, former superintendent of the University Hospital, Baltimore; Lieuts. Dwight H. Mohr, Roscoe Hannigan, Daniel Woodruff, J. K. Richards and Daniel Hutton. Under their command will be an enlisted personnel of 48 men, 33 of whom will be selected from the Fifth Regiment and the rest from the First.

THE child welfare unit to be sent abroad by the American Red Cross, in charge of Dr. J. H. Mason Knox, has left for France. Dr. James L. Gamble, assistant in pediatrics at the Harriet Lane Hospital for Children, a part of the

Johns Hopkins Hospital, accompanied Dr. Knox.

DR. KARL H. VAN NORMAN, formerly assistant superintendent of Johns Hopkins Hospital, who resigned in November, 1915, for war service with the Canadian forces and was placed in charge of a base hospital in Ramsgate, England, and later was made assistant chief of the Canadian hospitals in England, has returned to this country to recuperate, and is in temporary charge of the Canadian recruiting station at Minneapolis.

DR. ARCHIBALD C. HARRISON, director of the University of Maryland Base Hospital Unit, was recently operated on by Dr. Thomas S. Cullen in St. Joseph's Hospital for acute abdominal trouble.

DEATHS

OTTO SALLY BINSWANGER, M.D., Portland, Ore.; University of Maryland, Baltimore, 1882; aged 63; a Fellow of the American Medical Association; professor of organic chemistry in the University of Oregon, Portland; a member of the medical staff of St. Vincent's Hospital; a veteran of the Franco-Prussian War; died at his home September 25.

ABNER TOOTHAKER WELLS, M.D., Kendallville, Ind.; Baltimore University, 1899; aged 42; a member of the Massachusetts Medical Society; died August 17 in Little Rock, Ark.

FLOYD JOHN HODGE, M.D., Florence, Mass.; Baltimore Medical College, 1908; aged 33; died in Plainfield, Mass., August 22.

JOHN SWOPE MATHIAS, M.D., Kansas City, Mo.; University of Maryland, Baltimore, 1879; aged 62; died at his home September 17.

AUGUSTINE B. LIBBY, M.D., Smyrna Mills, Maine; Baltimore University School of Medicine, Baltimore, 1894; aged 60; a member of the Maine Medical Association; died at his home about September 7.

WILLIAM JAMES FRANCIS BLANEY, M.D., Baltimore; University of Maryland, Baltimore, 1896; aged 44; formerly a member of the Medical and Chirurgical Faculty of Maryland; died in St. Joseph's Hospital, Baltimore, September 25, from heart disease.

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WAR WORK OF AMERICAN MEDICAL WOMEN.*

By Eliza M. Mosher, M.D.

THE second annual meeting of the Medical Women's National Association, Dr. Bertha Van Hoosen of Chicago, president, was held in New York City, June, 1917. In view of the pressing need of physicians and surgeons in the war zone and in the devastated districts of Europe, a war service committee was appointed by the association to deal with the situation. This body created an executive committee with defined powers, of which Dr. Rosalie Slaughter Morton was unanimously elected chairman. Dr. Morton's selection for this post was a wise one. The Serbian Government had bestowed upon her a decoration for her service in that country. In France special privileges had been given her to inspect and study the French hospitals, and after returning home from foreign duty she has still kept in close touch with the work.

Mr. Leo Schlesinger of New York City placed at the disposal of the committee a suite of rooms in his office building, 637 Madison avenue, admirably suited to its purposes, and there early in June the committee was installed and intensive work began. Before the committee had completed its organization, Dr. Franklin Martin, chairman of the General Medical Board of Washington, asked for an outline of its plan of work. This outline, which Dr. Morton presented in person, received the unanimous approval of the board, and Dr. Morton was appointed a member of it and chairman of a committee of nine women physicians from different parts of the country, who were selected from a list of twelve submitted to Dr. Martin.

* A resume of the first quarterly report of the Chairman of the Women's Hospitals Committee to the Medical Women's National Association.

This Committee of Women Physicians of the General Medical Board may be regarded in the light of a congressional committee, its constituency being the women physicians of the United States. If the latter wish to have force and efficiency, organization is necessary. This committee of nine members is not permitted to increase the membership of the General Medical Board; obviously, therefore, it could not encompass the extensive work now going forward under the American Women's Hospitals, which, it is hoped, the general co-operation of women throughout the country will make even more extensive and thorough, and consequently of more value to the General Board. We are now in a position to supply the data necessary to supplement that on the cards sent out from Washington, and on file there.

Copies of the outline prepared for the General Medical Board were laid before Col. J. R. Kean, Director of the Department of Military Relief of the American Red Cross and the Surgeon-General of the Army, General Gorgas. They both expressed the greatest interest in and approval of the work. General Gorgas said that if the war continued for any length of time, the services of every woman doctor in the country would doubtless eventually be needed.

To anticipate this need, the plan of work, with registration blanks, was mailed to 5000 medical women, asking them to enroll. On October 6, at the time the first quarterly report of the American Women's Hospitals was issued, 582 women had registered, as follows:

I—Women's units, 150; II—Women's units to Allies' armies, 110; III—Service in established units, 103; IV—Maternity units to devastated regions, 84; V—Village practice, 25; VI—For service in any of the above five, without choice, 110. The registration blanks are still coming in, and it is hoped that every woman physician in the country will record herself as being willing to serve her country in its hour of need.

Dr. Esther Lovejoy of Portland, Ore., and Dr. Alice Barlow of Winnetka, Ill., are now making a study of civilian conditions for our War Service Committee, and the following doctors, members of the American Women's Hospitals, have been sent by the Red Cross to the other side:

Esther L. Blair, M.D., Pittsburgh, Pa., Women's Medical College of Pennsylvania.

Dorothy Child, M.D., Johns Hopkins University.

Florence Child, M.D., Johns Hopkins University.

Edith Lyon Heard, M.D., Women's Medical College of Pennsylvania.

Mary Nevin, M.D.

Esther E. Parker, M.D., Cornell University.

Helen L. H. Woodroffe, M.D., Denver Homeopathic, 1900.

Marion C. Stevens, D.D.S., Tufts College.

Ida R. Shields, M.D., University of London, England.

Laura C. Wiggin, anesthetist.

In September the Red Cross asked for two units of women doctors to go immediately to Roumania. Their departure has been delayed for diplomatic reasons incident to the situation in Russia. There are also in readiness 40 doctors, who may be called within the next 30 days, and units have been arranged which can be mobilized within a few hours.

The women doctors present an attractive appearance in their uniforms, which were planned by Dr. Morton at the request of the Red Cross. The lines of the Red Cross uniform for men are followed, and the uniform is both smart and attractive.

The American Women's Hospitals' flag and proper insignia designed by Miss Brenda Putnam, a niece of that brilliant pioneer among women physicians, the late Mary Putnam Jacobi, has been adopted. The flag is blue and white; the drooping wings, the symbols of the American Women's Hospitals, are grouped around a shield bearing the name "American Women's Hospitals." The pins, of bronze, are sheltering wings, denoting protection and comfort, with the emblem of the various branches of the service placed upon them.

Open meetings of the American Women's Hospitals were held every Thursday afternoon throughout the past summer, and will be continued indefinitely. These meetings, presided over by Dr. Morton, or, in her absence, Dr. Emily Dunning Barringer, the vice-chairman, have been of great interest, not only to the members of the organization, but to the general public. Inspiring speeches by friends of the organization and officers, doctors and nurses returned from the front have been a feature of these meetings. One of the most interesting of these was the address made by M. Liebert, the French Consul-General at New York.

An important branch of the American Women's Hospitals is that of the A. V. A. (American Volunteer Aid). This body was formed after the British V. A. D. (Volunteer Aid Department) and is in a thriving condition. Those wishing to join are given forms on which must be entered all data concerning non-medical women who wish to be laboratory assistants, ambulance drivers, stretcher-bearers, interpreters, dieticians, clerks, etc. A number will be needed in the units already in readiness. These lay assistants have a distinctive uniform for both identification and protection.

The Surgeon-General of the Army has expressed his willingness to place in base hospitals, as contract surgeons, women physicians as anesthetists, radiographers and laboratory workers at

a salary to be arranged by contract, and not to exceed \$1800 per year. The need for laboratory workers is so great that the American Women's Hospitals have opened courses in this branch at the Women's Medical College of Pennsylvania; Women's Hospital, New York, and at the Research Laboratories of the New York City Board of Health. In them courses will be given to college women who have already studied chemistry and biology, in order to fit them, at a nominal expense, to become laboratory technicians, and to assist our physicians. Any physician connected with laboratories which offer such courses in the different parts of the United States and women wishing to apply for this training are requested to take up the matter immediately with the national chairman of laboratory work, Dr. Martha Wollstein, No. 1 West 81st street, New York City.

The chairman of the Committee on Army Hospitals in the Home Zone, both for acute and convalescent cases, is Dr. Mary Almira Smith, 33 Newbury street, Boston, Mass. The American Women's Hospitals have in Boston two hospitals in readiness for convalescent cases and several others near New York. Its Women's Army General Hospital of New York, which has recorded its personnel and equipment in the War Department at Washington, has been told by Surgeon-General Gorgas that it will be notified when this is needed, and that it has the same status as all other army hospitals in the home zone.

The Women's Committee of the General Medical Board has had two meetings, July 29 and September 29. A registration card was sent to the women physicians of the United States with a view to ascertaining how many would be willing to serve in base hospitals as contract surgeons, radiographers, laboratory workers and dressers of wounds. These cards are now being filed in Washington for reference in case need arises to place women in base hospitals to release men for field hospital service.

The following are the regulations regarding contract practice:

1. Contract surgeons do not receive pensions except by special act of Congress.

2. The Government pays for transportation, quarters, heat and light, the same as furnished the first lieutenants.

3. There is no additional pay for foreign service; the contract specifies where the service is to be, and the amount to be received for this special service.

4. Eighteen hundred dollars a year is the maximum, the minimum being whatever agreed to for the particular service to be rendered.

5. The amount is regulated by agreement; the surgeon states his price and the Government accepts or rejects; or vice versa.

6. The immediate superiors are commissioned officers of what-

ever rank in command at the station, where the contract surgeon serves, even although they be only first lieutenants.

The Surgeon-General's office expressed an interest in knowing how many women wished to become members of the Army Reserve Corps, and a letter was sent by the General Medical Board Committee of Women Physicians to the presidents of medical women's organizations asking an expression of preference for this service, but comparatively few made their offer of war service absolutely contingent upon their becoming *officers* in the Army Reserve Corps.

It is the intention of the Medical Women's National Association to continue the work of this War Service Committee until the end of the war if the need for it continues to exist.

THE CANCER PROBLEM AND THE WORLD WAR—A BRIEF RESUME OF WHAT HAS BEEN ACCOMPLISHED IN AMERICA DURING THE PAST TWO YEARS.*

By William Seaman Bainbridge, A.M., Sc.D., M.D., C.M.,
New York.

CONSIDERABLE interest was manifested a few months ago by the secular as well as the medical press of the country in the arrival in New York City of the "cancer mice," sent by the Imperial Cancer Research Fund of London to the Croker Cancer Research Laboratory for safe-keeping until the end of the war. The incident was significant from several points of view.

In the first place, with Zeppelins dropping bombs over London, and with the other destructive possibilities of the great war, there was always danger of losing these valuable hosts of "cancer strains," the interruption of which would mean serious disadvantage in the particular line of research in which the mice are involved.

Furthermore, the exigencies of war have practically stopped cancer research, for the time being, in the European laboratories, the great London institution from which the mice were sent being no exception to the general rule. The responsibility for the continuation of the various lines of experimental investigation has thus been thrown largely upon the research institutions of this country.

Still further, with all European hospitals taxed to the utmost with the sick and wounded victims of the war, little time has

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been left for the surgeons of those countries to devote to the further study of the clinical side of the cancer problem. And so, again, the work of continuing the development of the many purely practical phases of this great question has devolved largely upon the medical profession of the countries not engaged in the world conflict.

It may be timely, therefore, with the third year of the war, to look backward for a moment, and to review briefly the progress of our continued efforts in the direction of cancer research, both experimental and practical, during the past two years.

Lines of Research at the Beginning of the War.—Official bulletins and other publications issued during the first half of 1914, or before the fateful ultimatum of July 23 of that year plunged so much of the world into conflict, show, among others, the following lines of experimental and clinical investigation: metastasis formation; biochemical problems; changes produced in malignant neoplasms by radiant energy; alterations in tumor growth effected through diet and other external factors; the production of immunity; transmissibility; heredity; early diagnosis (serological and other tests); prevention (through a campaign of education); treatment (by chemical, physical, and surgical means).

It is impossible, in a brief review, to encompass all the work represented in the published reports of the various investigators; attention will therefore be directed to certain lines of research which bear most intimately upon the clinical or practical aspects of the cancer problem, viz., those which involve: (1) the etiology; (2) the early diagnosis; (3) the prevention; (4) the treatment.

Etiology.—*Heredity.*—Among the various questions concerned with the cause of cancer, that which deals with the possible influence of heredity has received perhaps the greatest amount of attention and has aroused the keenest interest among both the medical profession and the public during the past two years.

The awakening, or re-awakening, of interest in this particular phase of the problem may be said to have resulted from the presentation by Miss Maud Slye of Chicago, before the American Medical Association, at its annual meeting in 1914, of her exhibit, giving the results of her observations on a large number of mice. Loeb, Tyzzer and others had already devoted considerable attention to the question of heredity in connection with malignant disease, but the rather spectacular entrance of Miss Slye upon the field served to send "heredity data" broadcast upon the printed page.

Following up her first reports, Miss Slye¹ presented before the Association for Cancer Research, in April, 1915, the results of her findings from 10,000 mice necropsies, showing more than a thousand tumors in these animals. From these studies she was convinced that, whatever the ultimate nature of cancer may

prove to be, it is certain that it follows the laws of heredity, "not only in the transmission of cancer in general, but also in the transmission of cancer of specific organs, with an inevitableness which makes it a character that can be manipulated." She holds that there is transmitted a tendency for cancer to occur from a given provocation, such as acute or chronic over-irritation, and that the elimination, as far as possible, of this provocative factor, however manifested, from individuals of high cancer ancestry should go far toward lessening the incidence of cancer. And, further, "the eugenic control of matings, so that cancer shall at least not be present or potential in both sides of the hybrid cross, ought to eventuate in a considerable decrease in the frequency of human cancer."

Referring to Miss Slye's application of the Mendelian principle to her findings, Little,² of the Harvard Medical School, challenged her observations regarding a type of color inheritance as being quite contrary to the more generally accepted principles of Mendelian inheritance. Her subsequent denial of any desire or intention to apply a Mendelian interpretation to her experimental results, Little remarks, is "an extremely important post-script to her paper, since it makes it impossible to expect the exact numerical predictions in crosses which her reviewers have believed could be made."

Despite the fact that the methods have been "biological and more or less crude," Tyzzer³ holds that the work with reference to heredity has yielded remarkable results, "in that this branch of science, with the establishment of Mendel's law of heredity, now has a mathematical basis in which to definitely prophesy results." He considers it premature, however, to generalize from advances in this phase of work until the full significance of intrinsic or inherited factors and the mode of their inheritance is understood. "The dogma," he says, "that inheritance is of no importance with respect to cancer, which has been so long taught in the course of medical education, is based upon obsolete hypotheses of inheritance and should be given no further credence. The question at the present time is an open one demanding further investigation, for which the experimental breeding of species in which tumors frequently occur is to be considered as one of the most fertile fields of tumor research. After certain facts relating to inherited tendencies are established as the result of animal experimentation, their final application to the human being may then be tested."

Another, and perhaps a more imminently practical, phase of heredity has been studied by Loeb,⁴ of the Department of Comparative Pathology, Washington University, St. Louis.

Following his preliminary studies of 1901 and 1902, Loeb, in 1907, undertook an analysis of the influence of the ovary, and especially of the corpus luteum, in the spontaneous development

of mammary cancer in mice. He showed that it is possible to produce "transitory" uterine tumors in various animals through the co-ordinate action of an internal secretion of the corpus luteum and of mechanical factors. He described these new formations, which had the structure of maternal placenta, as "deciduomata" or "placentomata." He described them as "transitory" because retrogressive changes set in after a certain time, the newly formed tissue finally becoming necrotic. Two sets of factors, it is held, in the etiology of cancer were established by the investigations conducted by Loeb and his co-workers, viz., (1) hereditary factors, and (2) chemical actions exerted by an internal secretion.

"We could show," Loeb holds (1), "that the hereditary factors are not identical with the internal secretion and do not act by changing the number of corpora lutea and their activity, but that their point of attack is somewhere else. It appears probable that with the co-operation of hereditary conditions all those internal secretions are factors in the origin of cancer which initiate or sustain continuous or periodic growth processes." Other factors, such as mechanical stimulation and the presence of micro-organisms, are suggested as possibilities, but whether or not these additional factors enter, he considers the first two (heredity and internal secretion) sufficiently strong to determine to a great extent the frequency of cancer in mice.

Wood,⁵ of the Crocker Research Laboratory, holds that "While there is little reason at the present time to believe that heredity plays an important part in the occurrence of cancer, yet certain experiments in breeding mice have suggested that in these animals, at least, and in certain strains only, cancer may be subject to the laws of heredity. That these observations apply to man is doubtful, and the question can be settled only by very extensive studies which are of much more final value than breeding experiments."

The immediate and practical outcome of these investigations, as I have pointed out elsewhere,⁶ is met by the surgeon whose practice embraces a large number of cases of cancer, and whose patients afflicted with this disease have come within the pale of the "campaign of education concerning cancer," through lectures, printed matter, or otherwise. It cannot be gainsaid that it is of importance that such problems concerning the origin and perpetuation of cancer be thoroughly investigated in the laboratory, and that clinical data should be collected, wherever possible, which may later be correlated with experimental data. It is most unfortunate, however, that, at this stage of investigation, any one should urge the "eugenic control matings" for the control of cancer in human beings.

Transmissibility.—The investigation of this phase of cancer etiology has continued to center largely about the interesting

experiments of Peyton Rous, of the Rockefeller Institute, with the transmission of sarcoma in chickens, by means of extracts obtained by crushing the growths and passing them through a Berkfeld filter. Ewing,⁷ in discussing the significance of this tumor, calls attention to the difficulties encountered because of the lack of understanding of avian pathology. "One would hesitate," he says, "to apply the standards of human pathology to the tissue reactions of the chicken." "While the data are still inadequate to force any conclusion," he continues, "I have received the impression that Rous' sarcoma is a genuine neoplasm, occurring only in the chicken, and that the transmissible virus is of chemical, and possibly of ferment nature. The extensive series of transplants has probably intensified the action of any such chemical agent present in the original tumor, so that effects are now being produced with this tumor which were not possible with the spontaneous growth and which probably have no counterpart in any process spontaneously occurring in Nature. At any rate, the principles deduced from this process must for the present be applied to this disease and to no other." He calls attention, however, to the probable influence in some human tumors of chemical agents such as may be active in the chicken sarcoma. "While many tumors, after their area of origin is defined, grow exclusively from their own resources, others grow by progressive inclusion of previously normal cells in the tumor source." This principle, according to Ewing, comes to light under various different circumstances, and may be employed to account for diffusely spreading or multiple tumors of serous, mucous, or cutaneous surfaces, and in systematic tumors of lymph-nodes; for collateral hyperplasia about the edges of some tumors; for Paget's disease covering much of the chest and trunk; and for the neoplastic proliferation of liver cells about hepatic metastases, excited by the pigment of melanoma.

Biochemical Cancer Stimulus.—"Is there anything in pre-cancerous conditions," asks Calkins,⁸ in discussing his experiments with cancer and normal tissue on a free living ciliated protozoon, "to indicate an accumulation of products of destructive metabolism or of autolysis which will act as externally introduced stimulants on the normal cells?" The main problem of the cause of cancer, according to this observer, may be approached by way of this secondary problem. In summarizing the results of his observations of the effects of cancer tissue on protozoa, Calkins finds such a clue to the causation of cancer in the well-known facts which associate chronic irritation with pre-cancerous and cancerous conditions.

To prove or disprove each step of this theory of the cause of cancer empirically, however, as Calkins observes, is the work of years, "but an advance step in this direction is now under way

in the attempt to localize experimentally the factors in autolyzing tissue capable of stimulating cellular activities, and to distinguish them from the lethal factors."

Gaertner,⁹ in continuing his investigations concerning the possible causal relationship between cancer and a "nitrogenized auto-intoxicated lymph," considers that the chemical studies of Rous' serum in chicken sarcoma have verified the excessive nitrogen infiltration which he holds to be so largely concerned in the production of this disease. The transformation of a precancerous lesion into cancer, which Gaertner considers more a matter of accidents than of sequence, "is not a metamorphosis of the existing diseased tissues, but a supra-activated, aggressive process of its underlying highly stimulated normal tissue, due to loss of ferments to defend the underlying cells against foreign or toxic protein products; in other words, an excess of pathologic nitrogen lymph." This is substantiated, he holds, by finding an increase of non-collodial nitrogen in the blood and an increase of collodial nitrogen in the urine of cancer subjects, and, finally, by the fact that cancer toxemia and death are due to uremic nitrogen poisoning.

Whether, out of all these investigations, there will be discovered a biochemical stimulus (perhaps of endocrinic origin) as the provocative factor in the production of cancer, must, of course, be determined in future. It is, at any rate, an interesting field for further research, and one having a definite bearing upon the treatment of cancer.

Parasitic Stimulus.—Investigations bearing upon the possible parasitic origin and infectious nature of cancer have been continued by Gaylord¹⁰ and his associates, at the State Institute for the Study of Malignant Disease, Buffalo, N. Y., and by Smith¹¹ and his co-workers, at the Laboratory of Plant Industry, United States Department of Agriculture.

The further observations of Gaylord have strengthened his belief that endemic goiter and carcinoma of the thyroid in the *Salmonidae* are the same disease, and that the agent causing the disease is a living organism. The effect of this observer's previous pronouncements with reference to cancer in fish upon the fisheries of certain sections is doubtless not forgotten.

Smith, in his further studies of plant tumors, while making no claims that the organisms which he has isolated, and with which he has produced tumors at will, are the cause of human cancer, yet holds that they induce a set of phenomena which, allowing for the differences between the higher plants and animals, follow a strikingly parallel course. He is of the opinion that the "very iconoclastic and suggestive fact," developed by Rous, that sarcoma in fowls is due to a filterable virus, "to a something, separable from the cell itself, which can persist after the death of the cell," is significant in this connection. He con-

siders that this may be regarded "as having advanced the subject a great way in the direction of the contention that human and animal cancer is due to an intracellular parasite, since we know of no chemical substance, enzyme or other, capable of multiplying itself indefinitely."

From the point of view of therapeutics any findings with reference to a parasitic stimulus in the production of cancer in fish, animals and plants are as yet without application to human beings. Their only immediate practical bearing may be said to concern the campaign of education, and the confusion and harm caused in the minds of the public through the too-free dissemination of the data relative to the findings of these investigators. That these lines of research are considered of importance, however, may be seen from the pages of the July issue of the *Journal of Cancer Research*, which represents, to a large extent, the output of the various laboratories to date.

While the work of the last two years, some of which has been mentioned above, has been important, especially as continuing promising lines of research, nothing has been developed thereby to encourage one to look for a speedy solution of the cause of cancer.

On the other hand, as Ewing⁷ has pointed out, there seems to be reason for "regarding all forms of neoplasms as specific diseases, connected only by the fact that they are neoplastic in greater or less degree, but differing in their etiology, clinical course, and therapeutic possibilities."

In other words, it would seem that the term *cancer* is still being applied to a pathologic composite, capable of further separation into different disease entities, each, perhaps, having its own peculiarities of cause and course, and hence its own requirements as to prevention and cure.

Early Diagnosis.—While an unusual amount of attention has been devoted (chiefly in lectures and printed contributions) to the subject of the early diagnosis of malignant disease, practically no new light has been shed during the past two years upon the obscurity which has always enveloped this important field of observation.

The literature of the period under consideration presents a number of contributions to chemical or biochemical tests, but none are especially hopeful. The Abderhalden test, which for a time was thought a probable solution of the difficulty, has proved disappointing. Levin¹² and Van Slyke, who have made careful observations in this connection, conclude that the diagnostic value of the Abderhalden reaction in cancer is, to say the least, doubtful, and that "for the present the method belongs to the research laboratory and not to the clinic."

A review of the work along the line of the sero-diagnosis of malignant disease furnishes no reason for changing the views

which I expressed in 1914:¹³ "It is, of course, highly probable that the metabolism is disturbed in cancer, and that the fluids of the body may be different from the normal; such changes, however, if present, must be so subtle as to have escaped observation. Not one of the proposed tests can be relied upon. They are all non-specific and inconstant for cancer. Hence examination for the purposes of diagnosis is still almost entirely restricted to examination of the tumor or ulcer itself."

Prevention.—A large part of the experimental work inaugurated or continued during the past two years has had for its object the ultimate discovery of some means of preventing cancer, however remote, at times, this purpose may have seemed.

Immunity.—Most conspicuous, in point of the amount of time and attention devoted to it, and of its importance from a practical application, should such a possibility be realized, is the work on immunity. Unfortunately, the period under discussion has yielded nothing which gives tangible hope of a speedy transference of this possibility to the category of certainty, or even of probability. For, as so often emphasized by the Imperial Cancer Research Fund,¹⁴ "immunity to cancer has only been demonstrated against cancer-grafts and the tumors arising from them. The procedures which are effective under these conditions are without effect on spontaneous tumors or analogous grafts of spontaneous tumors. In fact, the cancer immunity referred to depends on the slight biological difference existing between the grafted tumor derived originally from one individual, and the tissues of another individual of the same species as host for these tumor-cells for the time being. So long as a passive transference of the resistant condition from actively immunized animals to fresh individuals, and particularly to spontaneously affected animals, remains an unattained ideal, no application can be made of the knowledge which has been acquired of cancer immunity to the treatment of cancer."

Ewing⁷ considers it apparent that immunity to tumors is histioid and cellular, and that it reveals itself in the reactive growth of connective tissue, phagocytosis, and lymphocytic attack on the tumor cells. Serum immunity investigations, he holds, have accomplished practically nothing, "except to show that the malignant tumor process can probably not be controlled by investigations along the lines which have proven effective in bacterial diseases."

Despite the difficulties above implied, the extreme importance of the subject has stimulated American observers to continue their investigations in this direction. The fact that immunity can be induced in animals, under any conditions, gives the nucleus for the hope that sooner or later the investigations will reveal the secret of the application of this principle to the production of immunity to cancer in man.

Of interest in this connection are the researches of Murphy and Norton,¹⁵ of the Rockefeller Institute, to determine the effect of X-ray on the resistance to cancer in mice. They found that the chief characteristic of a failing heteroplastic graft in the unsuitable host is a marked local accumulation of lymphocytes. The histological picture was found to be identical with that noted in a failing cancer graft in an immune animal of the same species. Synchronous with the establishment of the cancer immunity and during the period in which the lymphocytes are accumulating around the cancer graft, there is a lymphocytic crisis in the circulating blood, this being observed in actively immunized animals as well as in those possessing a natural immunity, but being totally absent in animals susceptible to the cancer graft. If this lymphoid crisis be prevented in immune animals by a previous destruction of the lymphoid elements with X-ray, the potentially immune animal is changed to a susceptible one. Leaving out of consideration the complicated question of the direct effect of X-ray on cancer, they studied this artificial method of producing a lymphocytosis in relation to the resistance of mice to their own spontaneous tumors.

In order to do this they removed the cancer, and then subjected the animal to a stimulating dose of the X-ray. A graft of the original tumor was then immediately replaced in the groin of the animal. The same procedure, with the omission of the X-ray, was carried out in control animals. In other animals, as a further check to the experiments, the cancers were removed and exposed directly to the same amount of X-ray that the animals of the first group had received, a graft of the tumor being then returned to the original host. "An X-ray dose," they found, "which produced a lymphocytosis when administered direct to the animal was sufficient to render 50 per cent. of the mice so treated immune to a returned graft of their own tumor, and in the other 50 per cent. greatly to retard the return of the disease. A similar dose of X-ray given to the cancer direct outside of the body did not influence the subsequent growth of a graft of this tumor when returned to its original host." These observers considered that if this pronounced result could be obtained with one stimulating dose, it is probable that a more pronounced effect might be obtained by a second exposure to X-ray after a suitable interval.

These observations recall the work of Wedd, Morson and Russ on the production of immunity in mice by radium-irradiated mouse carcinoma.¹⁶

The possible application of investigations along these lines to the treatment of cancer in human beings gives matter for interesting speculation and for further research.

Campaign of Education.—While the various lines of laboratory research looking to the prevention of cancer have been

followed with interesting results from an experimental point of view, nothing has been evolved which may be utilized in the prevention of the disease in human beings. Those who see in errors in diet the beginning and the end of the cancer problem may see in some of the experimental observations a verification of their own theories of prevention and cure. But however significant any such observations may be as indicators for continued research, few will agree that enough of tangible evidence has been brought forward to warrant efforts in the direction of the prevention of cancer through changes in diet or other external conditions. Much less is there any tangible clue, in any of the experimental work, to a therapeutic regime which, of itself, will eradicate cancer through prevention or through treatment once the malignant process is recognized.

From a practical point of view, therefore, we are left with no crutch to lean upon more than that which the campaign of education may furnish. The education of the medical profession in the earlier recognition of the signs and symptoms of cancer, and in the more careful observation of conditions and lesions which may be conducive to cancer, has been emphasized in many quarters during the past two years. The education of the public with reference to the part they must play in the control of this disease has been made the subject of innumerable lectures, committee meetings and printed contributions. Such a campaign, *carefully safeguarded*, is, unfortunately, all that may be utilized at present in the effort to prevent cancer.

Treatment.—From the therapeutic point of view nothing epoch-making, either experimentally or clinically, has been evolved during the past two years.

Experimental.—In 1914 Benedict and Lewis¹⁷ published the report of their observations on the cure of malignant tumors in rats by the induction of diabetes with phloridzin. They used 40 animals inoculated with the Buffalo rat sarcoma. These animals were placed on a carbohydrate-free diet, and were injected every second or third day with phloridzin in olive oil, 0.2 gm. being used. All tumors which, at the beginning of the treatment, did not exceed 20x25 mm. in size underwent rapid and complete disappearance.

Wood and McLean¹⁸ later undertook a series of experiments "for the purpose of ascertaining to what extent the results of these investigators (Benedict and Lewis) could be duplicated in large series of animals bearing the tumor with which they had worked, as well as of animals bearing other types of neoplasms." They also treated a case of sarcoma in man with phloridzin, with an unfavorable result. From their observations they concluded that "any 'cures' obtained in work with the Buffalo rat sarcoma

must be ascribed to spontaneous absorption rather than to the effect of the therapeutic agent."

Benedict,¹⁹ challenging the findings of Wood and McLean, on the basis of inadequate phloridzination, maintained the position originally taken by himself and his co-workers.

Ewing⁷ points out that, while all tumors do not react to dietary changes, "the important feature of this work consists in the demonstration that the subject is susceptible of experimental study and opens up one of the most attractive fields in experimental cancer research."

Bulkley has recently brought forward again the claim of earlier writers and with a number of other investigators urges the importance of a non-protein diet in the prevention and cure of malignant disease. Some observers believe in other dietetic changes, and a few have even urged an increase in protein intake. This whole subject of diet certainly offers a field for further investigation.

Clinical.—The strictly practical phase of the treatment of cancer has to offer merely a "report of progress." Investigations have continued with regard to the use of X-rays, thermoradiotherapy, fulguration, radium, and other physical agents, "autolysin" raised the hopes of some for a time, and then practically disappeared from the horizon, and various minor "fads and fancies" of treatment have received full attention at the hands of some, while surgery holds its own, but offers nothing of a distinctly new character.

Practical Deductions.—From the foregoing brief review of some of the lines of investigation which have been pursued during the past two years, the following deductions, of a practical nature, may be drawn:

Etiology: (1) None of the investigations, of either a purely experimental or of a strictly clinical character, have revealed anything concerning the cause of cancer which need give rise to a radical change in the generally accepted views with regard to the treatment of the disease.

(2) The laboratory investigations with regard to heredity should be continued, but it is deplorable that, at this stage of knowledge, this possible factor in etiology should be brought to bear in the effort to control cancer in the human subject. The advocacy, on the basis of these findings, of the "eugenic control of matings," has already given rise to vastly more mental suffering than is warranted by the facts at hand.

(3) Whatever part soil and diet, and other allied factors, may play in the cause of cancer, the findings so far published do not warrant the application of deductions therefrom to the "diet plus regime" method of treating cancer, if this is to exclude the early and radical removal, by surgical means, of the cancer.

(4) The findings with reference to the causative effect of pro-

longed irritation reinforce the view that it is important, wherever possible, to eliminate this factor by rational means.

Early Diagnosis.—The clinician has been given no reliable aid to diagnosis in the early stages of cancer by the continued researches with regard to the various "tests," or "reactions."

Prevention.—The education of the medical profession with reference to the earlier and more accurate diagnosis of precancerous and early malignant lesions, of the layman with regard to the avoidance of the sources of chronic irritation and other factors which may be conducive to the development of this disease, together with a hearty co-operation between physician and layman, are emphasized by continued investigation. No definite means of preventing cancer has been developed.

Treatment.—Nothing has been developed which in any sense detracts from the rôle of surgery in the treatment of cancer. Diet, hygienic regime, and all adjuvant measures, should be given their proper place as aids, merely, and in no sense as substitutes for surgical intervention.

LOOKING FORWARD.

Surgery removes either a precancerous condition or a malignant process that has already become active in the body. While this method of treatment is the best we have to offer today, it is to be devoutly hoped that the painstaking research and clinical observation of the host who are devoting so much attention in laboratories and hospitals all over the world to the means of conquering this dread malady will result in finding the essential etiology, and offer us a surer prevention and a better cure.

Until comparatively recent times the term cancer included many diseases, such as tuberculosis, syphilis, and actinomycosis, which are now recognized as definite entities; in the judgment of the writer there still remain, under the term cancer, a number of diseases which will in their turn be differentiated. To attack malignant disease as a common malady is likely to be as ineffectual in the future as it has often been in the past, but by elimination we may make more rapid progress toward a solution of the cancer problem.

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ERRATA.

1. The statement, "*They also treated a case of sarcoma in man with phloridzin*," applies to Benedict and Lewis, and not to Wood and McLean.

TETANUS IN THE ALLIED ARMIES.

IN the early period of the European War many cases of lock-jaw or tetanus developed in the wounded of the allied armies. This very fatal disease is caused by a bacillus which is often found in garden soil, street dust and in the earth in the vicinity of stables. In order to cause tetanus the germ must lodge in a wound and find suitable conditions for its growth. Injuries in which clothing or foreign matter is forced widely or deeply into the tissues are the most dangerous, because the tetanus germ can only flourish in places into which oxygen cannot penetrate, just as toadstools grow best when sheltered from the sun.

As soon as the stress of war conditions permitted, all badly wounded men were immediately given injections of the serum against tetanus as a routine procedure to prevent this dreaded disease. The use of the antitoxin caused a prompt reduction in the number of cases, and the control of tetanus in the armies can be justly cited as one of the ways in which science is helping valor to win the war.

Book Reviews.

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles. Volume III. Twenty-seventh Series, 1917. Philadelphia and London: J. B. Lippincott Company. Price, \$2.

Perhaps the most instructive of the many articles in this interesting issue is that by Babcock on Reconstructive Surgery of the Extremities, in which, while describing the many devices for preserving apparently hopeless parts from crush and gangrene, the surgeon takes the most extreme position against amputation. The suggestions for supplying temporary circulation to parts whose own circulation has for a time been completely cut off are worthy of attention from every practitioner. To bury "dirty and badly-mangled tissues" under the skin of the abdomen in order to keep them alive till they recover is nervy surgery.

We should hate, however, to pioneer his suggestion that the unused hands and feet of vegetating imbeciles should be commandeered for grafting on the stumps of active citizens, "as enabling them to make some return to the world for their subsistence and to make amends for their otherwise absolutely useless lives." We wonder that the editor did not cut *that* out of an otherwise remarkably fine article.

Other papers which strike us as good are those on Dislocated Kidney, by Bryan; Tetanus in the Present War, by Chobaitch, and the very entertaining and instructive experiences of Landis of Cincinnati during his campaign there against food adulteration. His picture of the ex-soldier in the Philippines, armed with a gambrel stick, chasing a seller of rotten meat at top speed and with blood in his eye over a four-storied warehouse, will certainly encourage timid guardians of the consumer. He believes that a dealer who offends again after the first exposure is a congenital crook and should be driven out of the business. The "first offender" may have done wrong only because he had to compete with the crook. Eliminate the crook and the "first offender" becomes law-abiding.

THE SURGICAL CLINICS OF CHICAGO. August, 1917. Volume I, Number 4. With 71 illustrations. Published bi-monthly. W. B. Saunders Company: Philadelphia and London. Price, per year, \$10.

Among the many interesting papers of this number we note one on Leucorrhea, which gives a very clear and condensed description of the modern views concerning the origin and treatment of this most distressing and often obstinate complaint. In spite, however, of the newest developments it is probable that the old last resort of "grin and bear it" will still often have to be applied. The author is positive that douches, while cleansing, have no heal-

ing value—a dictum which many practitioners will be slow to accept. The contention, based on clinical and microscopic studies, that leucorrhœa does not come from the portions of the uterus above the cervix is worthy of careful attention, and the participation of the urethra and Skene's ducts so frequently in the causation is of great therapeutic importance.

The above indicates the high tone and practical value of the issue prevailing throughout its pages, whether the subject be Semi-lunar Cartilages, Acute Hip Disease, Troubles of the Nasal Accessory Sinuses, Operation for Pendulous Abdomen, or Tendon Transplantation. For these and other papers we refer the reader to the original.

MEDICAL AND SURGICAL REPORTS OF THE EPISCOPAL HOSPITAL, PHILADELPHIA. Volume IV. Philadelphia: Press of Wm. J. Dorman. 1916.

This excellent publication, made possible by the generosity of a friend of the hospital, may well serve as a model to those who take a pride in institutions for healing which have no incentive to advertisement, and so are liable to let their own accomplishments go untold to the general profession.

We are especially impressed by several articles. There is a case of fine diagnosis in a patient whose case had baffled the staff of a hospital of high standing. The gold solution first gave inkling of the truth, and a diagnosis of early tabes dorsalis was followed by a course of mercury and salvarsan, with apparently complete recovery.

Another paper gives cases of cure of bone cavities of various sorts by use of the iodoform wax bone-filling of Mosetig-Moorhof. There are striking cases of healing of wounds by a form of skin-grafting perfected in the American Hospital in Paris, in burn and shell-wound cases which had been proven rebellious to other methods of grafting.

The practitioner who shrinks from a positive prognosis in his cases of incipient cataract will find some very helpful advice on this subject in a paper on Lenticular Opacities. The throat men make a good showing in a series of remarkable cases of recovery of foreign bodies from the bronchi and esophagus by the aid of direct bronchoscopy.

Last, we may mention a series of 23 cases of treatment of caries of the spine by bone transplants. In seven patients there was apparent arrest of the disease, with firm bony ankylosis. In three relief of pain and ankylosis were secured, but the patients were not, like the former, able to return to their homes without hospital supervision. The reporter is not enthusiastic as to the superiority of this method over those formerly in use, particularly in view of the danger of arousing new disease-activity and scattering the infection through the body.

MEDICAL CLINICS OF NORTH AMERICA. Volume I, Number 2 (Philadelphia Number). September, 1917. Published bi-monthly by W. B. Saunders Company, Philadelphia and London. Price, per year, \$10.

The general excellency of a volume which represents the best medical thought of Philadelphia, brought forth after abundant time for preparation, we need not express an opinion. Among the articles offered there are some which appeal more strongly than others.

Eight out of the sixteen contributors devote their space to diseases and disturbances of the heart and arteries, so that the volume presents in a way a monograph on the most recent developments along these important lines. We regret to state that the advice "make your will, and walk softly" is still the first to be offered by honest doctors in many of the disorders considered.

It does not seem to us that Dr. Daland has at all justified the rather impressive title connecting his endocarditis cases with dental decay. "Secondary to" conveys to many readers the impression "caused by."

The article on Leukaemia, by Dr. Sailer, is a model in terse summary of recent methods.

Dr. Riesman's warning that the hand should always be thrust under the left axilla while examining for dilatation is a very impressive point. "I have always taught that we must consider as the *apex* the most distant point toward the left at which the heart-beat can be felt; and that in some cases of myocarditis, though the beat is forcible in the normal place, the real point of the heart is quite a distance away under the axilla," showing dangerous enlargement. His remarks on the safety and healing value of simple lines of incisions along the sides of the calf of the leg, when tapping does not relieve cardiac dropsy, are worthy of note.

Dr. Weiseburg's report on 717 cases of poliomyelitis is very fine. He cannot convince himself that it spreads from patient to patient, or from abortive cases, as measles, scarlet fever and whooping-cough do.

The next issue of Medical Clinics will be the New York number.

DISEASES OF THE STOMACH, INTESTINES AND PANCREAS. By Robert Coleman Kemp, M.D., Professor of Gastro-Intestinal Diseases at the Fordham University Medical School, etc. Third Edition, Revised, with 438 Illustration. Philadelphia and London: W. B. Saunders Company. Price \$7. 1917.

This attractive work was first issued as setting forth simple and practical up-to-date methods for the diagnosis and treatment of stomach diseases, offering in its many striking photographs a sort of clinic on the actual cases discussed.

In view of the great value of X-ray pictures as an aid to diagnosis, a special section has in this present edition been devoted to

the radiography of gastric ulcer, gastric cancer, duodenal ulcer and gall-bladder disease. Many other radiographs are given also on other topics.

The discussion of the duodenal cap are very instructive, as are those on Lane's kinks, Jackson's membrane, ileocecal valve incompetency, subinfection, protein absorption. The forms of anemia and rheumatism due to infections by intestinal bacteria receive attention. In fact, it is shown that infection may arise, without exciting any suspicion of its origin, from any part of the digestive tract.

Although modern diagnostic methods in this specialty suggest the hospital, and therapeutic agencies are largely surgical (or at least involve surgery), the author's medical suggestions for treatment are very clear, complete and satisfactory. The illustrations, of themselves, would sell the book.

A HANDBOOK OF PRACTICAL TREATMENT BY MANY WRITERS.
Edited by John H. Musser, M.D., Associate in Medicine, and
Thomas C. Kelly, Instructor in Medicine, in the University
of Pennsylvania, Philadelphia. Volume IV. Philadelphia
and London: W. B. Saunders Company. 1917. Price, cloth,
\$7; half morocco, \$8.50.

This fourth volume is much more than just one of the series. In it all of the subjects treated in the other three volumes in which anything new and of importance has been worked out since those volumes appeared have been brought strictly up to date. This has necessitated the complete rewriting of a considerable number of the articles. A number of new subjects have been added in order to incorporate some of the more specialized new forms of treatment, such as Cerebro-spinal Syphilis, Hay Fever and Hay Asthma, Acidosis in Children, Occupational Diseases, Peridental Suppuration (with Riggs Disease), Splenectomy in Anemias, Specific Therapy of Pneumococcic Infections, Postural Treatment of Abdominal and Thoracic Visceral Disturbances, and Surgical Treatment of Diseases of the Spinal Cord. The volume is therefore a detailed summary of the newest advances in practical treatment.

The tone of the articles is well-balanced, the advice to the practitioner very sensible—an attitude which few preserve in the midst of the hosts of vaunted discoveries and cures which fill our journals.

The publisher's work is most attractive, making a very ornamental addition to the bookshelf and a very pleasant subject for leisure-hour reading.

The work is, as we have suggested, complete in itself without the other volumes, as far as new things are concerned; but for full consideration of the subjects discussed, of course the whole set is necessary.

With the above we have received a fifth volume of 218 pages,

which is a "desk index" to the whole series of four volumes, in addition to the individual index which each of the four contains.

ASTHMA. Presenting an Exposition of the Non-Passive Expiration Theory. By Orville Harry Brown, A.B., M., Ph.D. Formerly Assistant Professor of Medicine, St. Louis University. Thirty-six Engravings. St. Louis: C. V. Mosby Company. Price \$4. 1917.

Apart from the author's theory as to the causation of asthma (and there are many theories of many men), which may or may not be true, the reader being able to decide this point for himself, the volume is a very interesting and instructive review of the whole subject of asthma.

The author suggests that morphia acts better in conjunction with strychnia. He likes adrenalin applied endobronchially in a spray. He lays great stress on breathing exercises. He thinks the suppression of cough is one of the most important preventives, as cough substitutes forcible for passive expiration, thereby gravely disturbing the circulation in the recesses of the lung.

A very extensive review of the history of the study of asthma from the earliest times is given, with many epitomes of articles concerning it, and a series of condensed reports of the author's own cases of the most instructive sort.

The author endeavors to give his experience and reflections on this most difficult disease to the reader, who will find it well worth while to add this work to his library.

HANDBOOK OF GYNECOLOGY FOR STUDENTS AND PRACTITIONERS. By Henry Foster Lewis, M.D., Professor of Obstetrics and Gynecology in Loyola University School of Medicine, Chicago, and Alfred de Roulet, M.D., Professor of Gynecology in Loyola University School of Medicine. With 170 Illustrations. St. Louis: C. V. Mosby Company. 1917. Price \$4.

The impression made by a review of this little textbook of 500 pages is extremely favorable. The writers have the rare gift of brevity with devotion to details. The text marches right on to its goal, yet neglects nothing of value on its way. The writers seem to stand by the bedside and describe each detail as if it were actually before the eyes and under the touch of a student. The details of technique are so remarkably sketched that a nurse might take it as her nursing guide.

The peculiar sympathy of the writers with their subject-matter can be appreciated by anyone who will read the chapter on the "care after operation," in which they seek to guide the young practitioner in the handling of the patient "who has not been operated upon in the best manner and who has not been left in the best

condition." The men who provide against such possibilities in a spirit of kindness toward the operator ought to write textbooks.

The diagnostic discriminations of the text and the directions for medical and surgical treatment are of the same high grade. The illustrations are well chosen and beautifully clear, many of them from the museum of Loyola. The progress of the story is clinical, not anatomical.

CATARACT: SENILE, TRAUMATIC AND CONGENITAL. By W. A. Fisher, M.D., Professor of Ophthalmology Chicago Eye, Ear, Nose and Throat College. Published by Chicago Eye, Ear, Nose and Throat College. 1917. Price, \$1.50.

This is a most interesting exposition of the intra-capsular method of operation as developed by Smith of India and practiced by several of his pupils in America. Although the type used is a little peculiar, the quotations descriptive of the operation by these various experts, giving the actual words of each surgeon, amply justify by their authoritative value the rather awkward "get-up" of the volume. This value is further enhanced by the discussion in which several of these pioneers participate.

Smith, it seems, had up to date done thirty-five thousand cataract operations. In the busy season he and his chosen pupils average seven days in the week twenty-five cataract operations and ten iridectomies a morning, and you may see in his convalescent department often as many as two hundred and fifty cataract patients.

It is claimed that this method is now so far perfected that the long weary years of half-blindness, with ebbing business and increasing melancholy while the cataract is "maturing," are no longer necessary. Beautifully clear illustrations are given of each stage of the operation and of the instruments used.

THE PRESCRIPTION; THERAPEUTICALLY, PHARMACEUTICALLY, GRAMMATICALLY AND HISTORICALLY CONSIDERED. By Otto A. Wall, Ph.G., M.D., Professor of Materia Medica, Pharmacognosy and Botany in the St. Louis College of Pharmacy. Fourth and revised edition. St. Louis: C. V. Mosby Company. 1917. Price, \$2.50.

This book was out of print for some years. We do not see any special merit, from the medical standpoint, which justifies its revival. Just at this time the profession is looking forward, bending its energies to the New Medicine which is supplanting and refitting the methods of our fathers.

MARYLAND MEDICAL JOURNAL

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BALTIMORE, DECEMBER, 1917

KIDNEY AND URETERAL STONES.

A SPEAKER at a recent meeting of the Baltimore City Medical Society boldly made the statement that genito-urinary surgery was the most scientific clinical branch of all medicine. Whether this claim will be acknowledged by the other specialties is doubtful, but at least those of us whose memories extend backwards for 25 or 30 years recognize that great advance has been made in the diagnosis and treatment of diseases of the genito-urinary tract. In those days the diagnosis of stone in the kidney or in the ureter was a matter of guesswork, and only too often was the surgeon put to confusion when, upon cutting down on the kidney, no stone was found. The writer well remembers the spectacular operation of nephro-lithotomy performed by the late Dr. Tiffany at the University Hospital, in the middle eighties, when, for the first time in this city, and perhaps in this country, he removed a large stone from the kidney. This operation was hailed as a great surgical triumph, which, indeed, it was. Since that time the methods of diagnosis of lithiasis of the upper urinary tract have been greatly perfected. With symptoms that are suggestive of stone in the kidney, or even when there are only vague abdominal symptoms that cannot be traced to any definite cause, an x-ray examination should always be made. In most cases when a stone in the kidney is present it will be shown on a radiographic plate, but in some cases the rays pass through the calculus without casting a shadow. This is said to occur in 30 per cent. of cases at the James Buchanan Brady Clinic of the Johns Hopkins Hospital. Uric-acid stones seem to be the ones that least often are shown by the radiograph. In doubtful cases the pelvis of the kidney may be filled with thorium solution through a ureteral catheter, and a pyelogram taken, which will frequently show a stone that had been previously overlooked. Of course, a careful microscopic examination of the urine for pus and red blood cells should always be made, but in a small proportion of cases neither pus nor blood is found. The clinical history of the case, the microscopic exam-

ination of the urine, cystoscopy and ureteral catheterization, with a careful x-ray examination, will, in the vast majority of cases, determine a correct diagnosis, but even after all methods of diagnosis have been used, errors will occasionally occur. Stones in the ureter may be more frequently overlooked than those in the calices and pelvis of the kidney, as they are smaller and are deeply placed. Usually the passage of a ureteral calculus is attended with violent colic radiating along the course of the ureter, but in some cases the pain is at a definite fixed point, hence is liable to be mistaken for a number of other conditions, such as appendicitis, ovarian or tubal affections, gall stones, gastric and duodenal ulcerations. A radiographic examination is of great importance, but, as has been stated in regard to renal calculi, in quite a large proportion of cases the stones, though present, escape detection, and in some cases a shadow is found, apparently in the course of the ureter, but really entirely outside of this canal. These shadows may be due to phleboliths in the pelvic veins, or to calcareous mesenteric glands, or enteroliths, or atheromatous plaques on the vessels or gall stones, or even to pigmented moles on the skin. A stereoscopic radiogram may show their exact location, or an opaque catheter may be passed into the ureter and a skiagraph taken, thus showing the shadow to be due to some object either within or outside of the ureter. The injection of thorium solution into the ureter may also serve to make a concretion apparent that had previously been invisible. Fortunately, by cystoscopic examination, often much may be discovered as to the congestion or patulence of the orifices of the ureters, and by the introduction of ureteral bougies obstructions may be determined, and by the use of the waxed tipped bougies scratches may be detected after withdrawal. Not only is the ureteral bougie of great value in the diagnosis of stone, but by dilating the ureter the stone may pass on into the bladder, or it may be extracted with ureteral forceps. The methods of diagnosis, aside from the clinical history, are radiographic plates, cystoscopic inspection of the bladder, catheterization of the ureters, microscopic study of the urine, and, if necessary, injection of the ureters with thorium solution with radiography. By a combination of these means a correct diagnosis can usually be made.

As from 50 to 75 per cent. of ureteral calculi will pass, either spontaneously or by means of intra-ureteral manipulations, operations for their removal should not be undertaken until a fair trial of catheterization of the ureters has been made without success.

Medical Items.

THE following men, officers of the Medical Reserve Corps, have received their orders:

To Army Medical School, for a course of instruction, Lieut. John C. Woodland, Crisfield.

To Camp Devens, Ayer, Mass., for duty, from Fort Benjamin Harrison, Lieut. Leslie G. Taylor, Perryville.

To Camp Dix, Wrightstown, N. J., for duty, from Fort Oglethorpe, Lieut. Horace B. Titlow, Baltimore.

To Camp Gordon, Atlanta, Ga., for duty from Fort Oglethorpe, Lieuts. David Silverman, Baltimore; George M. Boyer, Damascus.

To Camp Lee, Petersburg, Va., for duty, from Fort Oglethorpe, Lieut. Martin J. Hanna, Baltimore.

To Camp Meade, Annapolis Junction, Md., for duty, from Fort Oglethorpe, Lieuts. Albert G. Singewald, Baltimore; Charles N. Branin, Hagerstown.

To Camp Pike, Little Rock, Ark., for duty, from Fort Oglethorpe, Lieut. Percy R. Fisher, Denton.

To Camp Sevier, Greenville, S. C., and report to the commanding officer of the base hospital for duty, relieved from present duties at this camp, Lieut. Joseph P. Edison, Baltimore.

To Chickamauga Park, Ga., for duty from Fort Oglethorpe, Lieut. George H. Reinhardt, Baltimore.

To Rockefeller Institute, for a course of instruction in laboratory work, from Fort Oglethorpe, Lieut. John F. Lutz, Baltimore.

Honorably discharged from the Medical Reserve Corps on account of being disqualified for active service, Lieut. Edward P. Simpson, Chance.

To Camp Greenleaf, Evacuation Hospital No. 4, Capt. Edward E. Lamkin, Vienna.

To Camp Hancock, Augusta, Ga., base hospital, from Fort Benjamin Harrison, Lieuts. Patrick F. McGuire, Irving K. Lovett, Baltimore.

To Camp Meade, base hospital, from Fort Benjamin Harrison, Lieut. Erwin E. Mayer, Baltimore.

To Camp Travis, Fort Sam Houston, member of board for examination for tuberculosis, from Camp McClellan, Capt. Charles W. Rauschenbach, Baltimore.

To Fort Oglethorpe, Ga., for duty with Hospital Train No. 22, Lieut. Frank L. Jennings, Hamilton.

To Fort Sam Houston, Texas, for duty, from Fort Benjamin Harrison, Lieut. Hertel P. Makel, Baltimore.

To Rockefeller Institute, for instruction in therapy of pneumonia, Lieut. Henry M. Thomas, Baltimore.

To Walter Reed General Hospital, for instruction in tuberculosis examinations, Lieut. Louis L. Jacobs, Baltimore.

To Washington, D. C., for duty at the Army Medical Museum in connection with supplying illustrations for lecture work, from Baltimore, Major Robert T. Taylor, Baltimore.

To Camp Hancock, Augusta, Ga., for temporary duty, from Fort Oglethorpe, Lieut. Edward P. Simpson, Chance.

To Camp Lee, Petersburg, Va., for temporary duty, Lieut. William H. Kable, Woodsboro.

To Camp McClellan, Anniston, Ala., to act as a member of a board of medical officers for the special examination of the command for tuberculosis, from Walter Reed General Hospital, Capt. Charles W. Rauschenbach, Baltimore.

To Phipps Clinic, Baltimore, for intensive training in his specialty, Lieut. Henry E. Austin, Baltimore.

To Plattsburg Barracks, N. Y., for duty in connection with ophthalmology and otolaryngology, section of surgery of the head, Capt. Alexander D. McConachie, Baltimore.

To Rockefeller Institute, New York, for a course of instruction in laboratory work, from Fort Oglethorpe, Lieut. Harry C. Schmeisser, Baltimore.

To San Antonio, Texas, Kelly Field, for duty, Lieut. Frederick C. W. Reinhard, Baltimore.

To Washington, D. C., and report in person to the Surgeon-General of the Army for temporary duty in his office, Major Robert T. Taylor, Baltimore.

To Camp Taylor, Louisville, Ky., for duty, from Army Medical School, Lieut. Samuel A. White, Baltimore.

To Camp Wheeler, Macon, Ga., 31st Division from Fort Oglethorpe, Lieut. Richard E. Yellett, Fallston.

To Hoboken, N. J., for assignment to duty, from Fort Oglethorpe, Lieut. John R. Downes, Preston.

To their homes and honorably discharged from the Medical Reserve Corps, on account of being physically disqualified for active service, from Fort Oglethorpe, Lieuts. Harry Diebel, Baltimore; from Camp Mills, Joseph W. Long, Walkersville.

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A JOINT meeting of the Baltimore City Medical Society and the Maryland State Dental Association was held November 13 at Osler Hall, 1211 Cathedral street. Dr. Weston A. Price, D.D.S., Director of National Institute of Dental Research, delivered an address.

CAPT. J. ALBERT CHATARD of this city, instructor of clinical medicine at Johns Hopkins Medical School, was appointed chief of the medical service at Fort McHenry base hospital.

CAPT. ALEXANDER D. MCCONACHIE, M.R.C., U. S. Army, has left for Plattsburg, N. Y., where he will be in charge of the eye, ear and throat surgical section of the base hospital.

DR. FRANKLIN P. MALL, professor of anatomy in the medical department of the Johns Hopkins University, a nationally known authority on anatomy and author of several textbooks on the subject, is critically ill at the Johns Hopkins Hospital, following two operations to remove gallstones.

DR. LEWELLYS F. BARKER, Baltimore, was elected president of the Southern Medical Association at the annual meeting of the association held in Memphis, Tenn.

THE semi-annual meeting of the Medical and Chirurgical Faculty of Maryland was held on October 31 at Havre de Grace. Dr. Purnell F. Sappington, Belair, president of the Harford County Medical Society, delivered the address of welcome. Dr. Guy Steele, president of the Medical and Chirurgical Faculty, spoke on "Pellagra in Maryland." Dr. Herbert Harlan of Baltimore read a paper on "Proposed Changes in the Medical Practice Act," and Dr. Arthur P. Herring, secretary of the State Lunacy Commission, addressed the meeting on "Psychiatric Problems of the War."

DR. WILLIAM S. THAYER, Baltimore, who went to Russia with the Red Cross unit, is in charge of the Red Cross work in Petrograd. He has 17 men assisting him.

DR. RICHARD F. KIEFFER, Baltimore, who is on duty with a hospital unit on the western front, has recovered from a severe attack of fever.

THE Physicians' Civic Club of Baltimore, after a full discussion, has unanimously endorsed a movement to secure a new charter under the Home Rule Amendment. Eighteen years ago the city adopted a charter which earned for itself the title of "Baltimore's Model Charter." Today the charter is out of

date. Since its adoption every city but one in the country has changed its charter, incorporating various modern features for securing greater efficiency and greater responsiveness to the will of the people.

DEATHS

QUIMBERT C. SCHUHART, M.D., Rochester, N. Y.; College of Physicians and Surgeons, Baltimore, 1882; aged 61; formerly a member of the Medical Society of the State of New York; died at his home about September 24.

STEPHEN CASSIN SPALDING, M.D., Shenandoah, Pa.; University of Maryland, Baltimore, 1870; aged 73; formerly a member of the Medical Society of the State of Pennsylvania; a director of the Citizens' Building and Loan Association and Shenandoah Mutual Fire Insurance Co.; died at his home, October 11.

ROBERT S. STAHL, M.D., New Market, Pa.; University of Maryland, Baltimore, 1882; aged 59; died at his home, November 2, from disease of the liver.

EDGAR DEWITT HURTT, M.D., Piscataway, Md.; University of Maryland, Baltimore, 1854; aged 87; died at his home, October 28.

JAMES STIFER GILBERT, M.D., Bordentown, N. J.; College of Physicians and Surgeons, Baltimore, 1886; aged 58; formerly a Fellow of the American Medical Association; a member of the Medical Society of New Jersey; from 1896 to 1901 Mayor of the city, and later, when Bordentown adopted the commission form of government, continued as Mayor; died at his home, October 11.

JOHN EDWIN RIGGS, M.D., Wilkinsburg, Pa.; College of Physicians and Surgeons, Baltimore, 1879; aged 62; a Fellow of the American Medical Association, and once president of the Allegheny County Medical Society; for two years school director, and for several years president of the local board of health; president of the First National Bank of Wilkinsburg; died at his home, October 3.

ANDREW N. FALKENSTEIN, M.D., Glen Rock, Pa.; College of Physicians and Surgeons, Baltimore, 1887; aged 63; died at his home, October 19, from nephritis.

JAMES A. SUMMERS, M.D., Johnson City, Tenn.; College of Physicians and Surgeons, Baltimore, 1874; aged 69; died at his home, August 4, from dysentery and laryngeal tuberculosis.

WILLIAM F. CLAYTON, M.D., Overlea, Md.; College of Physicians and Surgeons, Baltimore, 1906; aged 35; died at his home, October 12.

MARYLAND Medical Journal

Medicine and Surgery



The Medical Journal Company

BALTIMORE

Publishers

WASHINGTON

Volume Sixty
Number One

JANUARY, 1917

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MILK AND COMMUNICABLE DISEASE.*

By *Linsly R. Williams, M.D., Deputy Commissioner of Health,
State Department of Health, New York.*

AN outbreak of communicable disease was traced to the consumption of raw milk as far back as 1854. Since that time there has been a large number of epidemics traced to the consumption of raw milk, and in each instance it was found that there was, or had been, a case of specific communicable disease upon the dairy farm where the milk was produced or among employes handling the milk. There is now a large amount of literature on the subject of milk-borne diseases and numbers of epidemics of septic sore throat, typhoid fever, diphtheria and scarlet fever have been found to be due to the use of raw milk which had been infected with the organisms of these diseases.

The work of the British Royal Commission on the Study of Bovine Tuberculosis and that of Theobald Smith, Ravenel and Park in this country have conclusively demonstrated the fact that bovine tuberculosis may be transmitted to man, and that from 5 per cent. to 15 per cent. of all cases of tuberculosis in children are of bovine origin. During the past one and one-half years there have been reported to the State Department of Health at Albany over 800 cases of communicable diseases, causing 37 deaths, which were due to outbreaks of scarlet fever, septic sore throat, diphtheria and typhoid fever. In each epidemic the cases occurred largely upon the milk route of one dairy. A careful study of these epidemics has shown in each instance that the cause was due to the presence of an individual affected with one of these diseases upon a dairy farm supplying the milk to the persons who became ill of the disease.

The use of raw milk has not generally been considered in this country as a source of danger, but for many years physicians in Continental Europe have regularly recommended the use of boiled milk for the feeding of children and infants. About 20-odd years ago there was introduced into this country a change in infant feeding caused by the boiling or pasteurization of milk. As time wore on and the demand for the use of this milk became more widespread, physicians reported unfortunate results, and a few cases of scurvy were described among the many thousands of children using it.

With the increasing difficulties of introducing an adequate supply of fresh milk several of the larger milk dealers in our great cities conceived the idea of heating their milk in order that they might keep it for a longer time. These dealers then began to pasteurize their milk. In the pasteurization of 10 or more years ago it should be remembered that it was performed by what is known as the "flash system," which consists in rapidly passing milk over a heated coil raised to a temperature of 167 or more degrees Fahrenheit. When this system began to be more generally applied, objection was made to it by health boards and physicians for the following reasons. The health boards objected because they felt that this would enable unscrupulous milk dealers to sterilize filthy and disease-infected milk, and that in milk which had been heated in this manner the lactic acid bacteria would be

*Read at the Annual Conference of New York State Sanitary Officers, Saratoga Springs, June, 1916.

"Yesterday died last night."

A few years ago there may have been some doubt as to the efficacy of renal therapy, but today "Renal therapy constitutes one of the most active and efficient means of treatment for Nephritis that has been utilized."—*Renaut, Professor of Medicine at Lyons, France.*

Sajous, undoubtedly the most famous authority on glandular therapy in this country, referring to renal therapy, states that "It is more conveniently given in tablet form as NEPHRITIN, prepared in this country by Reed & Carnrick, the active substance of the kidney only being used in this preparation."—*Sajous, The Internal Secretions, Edition 1916.*

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destroyed, and that the milk, instead of souring, would become putrid, and would be consumed without the consumer knowing that it had spoiled, as it would not have the characteristic sour taste. Physicians objected on the ground that the consumption of this milk by infants and children would result in large numbers of cases of scurvy. The opposition was nowhere greater than in the city of New York.

Six years ago the city of New York adopted the general chlorination of the entire water supply of the city. This did not produce the expected diminution in the amount of typhoid fever in the greater city, and a more thorough study of the cases resulted in the discovery of several widespread epidemics upon the routes of one or more milkmen. By tracing this milk to its source, cases of typhoid fever and typhoid carriers were found upon the dairy farms, which had infected nearly the entire milk supply of one or more dealers. These and other epidemics soon convinced the authorities of the city of New York of the importance of pasteurizing the entire milk supply of the city.

In making a study of the subject it was found that milk pasteurized by the flash system had a certain number of disadvantages. Some of the milk in passing rapidly over the heated coil soon formed a film which varied in thickness, so that in some places the stream of milk passing over the coil was subjected to varying degrees of heat. Careful examinations made showed that such a method of pasteurizing did not always destroy the pathogenic bacteria. Later investigation showed that such a high degree of heat was unnecessary in order to destroy all pathogenic bacteria, and it was ultimately found that a temperature of from 142 to 145° F. if maintained for a period of 30 minutes would have this effect. Certain objections, however, are still made to pasteurization, as follows:

1. Feeding of pasteurized milk to infants may cause scurvy.
2. Pasteurized milk has a stale, flat or boiled taste.
3. Pasteurization of milk diminishes the amount of cream in a bottle of milk.
4. Pasteurization increases the cost of milk.
5. Pasteurization devitalizes the milk and reduces its food value.

Each and every one of these objections can be readily met.

The mortality records of the city of New York, where over 90 per cent. of the milk supply has been pasteurized by the holding method, show no increase in the number of deaths from scurvy. Even if there may be a possible increase in the number of cases of scurvy, it is fairly generally admitted by children's specialists that the danger from milk-borne diseases is far greater than the danger of scurvy, and that by the proper administration of orange juice to infants, beginning at the sixth month or earlier, the occurrence of scurvy will be prevented.

The second objection as to the change in taste of pasteurized milk has a certain foundation, because if milk be heated to above 155° F., it will have a somewhat boiled or flat taste, but if milk be properly pasteurized within the temperature limits now usually prescribed by cities and States, there will be no alteration in the taste. Simple experiments will readily demonstrate this. Many persons have made the test of sampling first raw and then pasteurized milk, and have not been able to distinguish between them.

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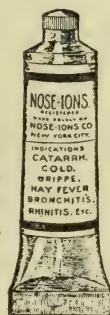


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Pasteurization properly performed produces absolutely no change in taste. If there is a change in taste, it is always found that the milk has been heated to a higher temperature than is necessary.

It has been stated by some observers that there is a diminution in the amount of cream when milk is pasteurized. This complaint is made by the consumer. A complete series of experiments carried out in the laboratory of the New York City Department of Health by Kilbourne showed that there was a diminution in the value of butter fat which rose to the surface in milk which had been heated to a temperature higher than is necessary through faulty pasteurization, and that within certain limitations the higher the temperature to which the milk was heated, the smaller the amount of cream which rose to the surface. But even at the higher temperature there is a diminution of only 10 per cent. in the amount of cream which rises. It should be definitely understood, however, that even though the cream line be diminished, there is absolutely no diminution in the fat content of the milk, and therefore no diminution in the nutritive value.

It must be admitted that the cost of machinery and the cost of operating a pasteurizing plant is considerable, but the actual cost is far less than 1 cent per quart of milk, and in some communities in New York State properly pasteurized milk is now being sold at the same rate as the raw product, and the concerns selling this milk are making money from the sale of their product.

A number of experiments have been made in feeding pasteurized milk to young, growing animals. It has been found that calves and other smaller animals, when fed on pasteurized milk, will thrive just as well and gain in weight just as steadily as when fed upon the raw product. An experiment carried on some years ago under the direction of Drs. Park and Holt of New York city in the feeding of infants showed that infants fed at the breast had fewer cases of illness amongst them, and did better than infants who were fed upon properly modified milk. In two groups of infants fed on modified raw milk and modified pasteurized milk there were fewer cases of diarrhea and fewer deaths among those fed on pasteurized modified milk than among those fed on raw modified milk.

Another interesting fact is that the cities of New York, Boston and Chicago have from three to five years had a large majority of their milk supply pasteurized, and during this period there has been a large diminution in infant mortality and in the number of deaths from diarrheal diseases.

It would seem, therefore, that the chief objection to the pasteurization of milk is that it is a change from the long-continued habit of the use of raw milk. Although there may be a slight increase in the cost of milk that has been pasteurized, yet the health insurance that is given in preventing a large number of epidemics of milk-borne infectious diseases is far more important than the small sum paid for this protection.

It must be said, however, that there are still a number of medical men and health officers who contend that pasteurized milk is nothing more than cooked filth, but sanitarians and health officers should insist that pasteurized milk must be pasteurized clean milk, and that every precaution be taken to insure the milk being pasteurized in clean containers. The method of pasteurization should be supervised, for if the milk is improperly pasteurized, complaints will come, and they will be made against the whole

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process of pasteurization. But if pasteurization is carried on intelligently and under the direction of qualified health officers, it will give the quality of milk that the people demand, and will result in a diminution in the amount of communicable diseases.—*Health News.*

OPEN AIR FOR THE DYSPEPTIC.

DOG fanciers have long noted that when a house dog begins to get fat and wheezy it is pretty apt to be attacked by a stubborn skin disease. In such a case they cut down the diet and increase the open-air exercise, thus relieving the over-burdened body of poisonous substances.

The sin of gluttony is common, and therefore much condoned, but, like every other violation of nature's laws, has a penalty. Fat inefficiency, sluggish mentality, the reddened nose, the pimpled face, certain of the chronic skin eruptions and much fatigue and nervousness are due to the abuse of the digestive apparatus. Rich, indigestible foods in large quantities, highly seasoned to stimulate the jaded palate, are forced into a body already rebellious from repletion. Exercise is largely limited to walking to and from the table, and bodily deterioration proceeds rapidly. Many an overfed dyspeptic, suddenly dragged by the stern hand of circumstance from a life of physical ease and plenty and forced to work out of doors, suddenly discovers that his semi-invalidism has gone; that a chronic skin derangement of many years' standing has disappeared, and that a new vigor and zest of life has been given him.

Not everyone can spend his whole time in the open air, but a certain amount of exercise and plain, wholesome food in an amount not exceeding the body's needs can be had by almost everyone. Simple, moderate diet and exercise make for health. These are not faddish food theories; they are just plain common sense.

HEALTH NEWS ISSUED BY THE UNITED STATES PUBLIC HEALTH SERVICE.

IN Southern California several ages ago the oil escaping from a small spring formed in a depression of the earth a little pool. The lighter portions of the oil evaporated, leaving the sticky asphalt. From time to time the rains covered the surface of the pool with water; animals and birds came down to drink, sank into the asphalt and were imprisoned in this gigantic animal trap. The hungry wolves saw there before their eyes fresh animal food of every sort, from the enormous mastodon to the smallest bird. They, too, were drawn into the trap, as were also the large saber-toothed tigers, which then roamed that vicinity. Today scientists are engaged in excavating the bones deposited there by indiscreet appetite.

The aim of civilization is to create inhibition—the quality which holds back and directs to useful purposes the natural appetites, preventing them from leading man into the pitfalls which beset overindulgence. Hunger is the great stimulus of action, but when it is satisfied to satiety, sodden inactivity follows. If the natural appetite is allowed to dominate, it leads to overindulgence, and the unwary victim suddenly finds himself in a trap from which he cannot escape.

One of the great elements in maintaining health is the regula-

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tion of the bodily intake to meet the appetite. The man who works with his hands requires more food than the brain worker. The man who labors in the open air needs more nourishment than he who sits cooped in an office all day long. Give the sedentary worker the appetite of the day laborer, and if that appetite be uncontrolled, the body will become clogged with the poisonous products of its own manufacture, and physical deterioration will surely follow. It is just as bad to eat too much as it is to eat too little. To indulge the appetite to too great an extent is equally as pernicious as its constant repression. The best is to be found in an average course, neither over- nor underindulgence, neither the following of the inelastic dietary nor the promiscuous and ill-considered use of foods. Many a so-called case of dyspepsia is nothing in the world but the rebellion of an overworked stomach, the remonstrance of a body which has been stuffed to repletion. A great deal has been accomplished in the reduction of infant mortality because we are able to control what infants may eat. Adults must for themselves exercise this as self-control. If this is done, there will be a decline in our adult mortality rates, and an increase in health and efficiency.

COMBATING INSECTS AFFECTING THE HEALTH OF MAN.

CONTINUED advances in the work of combating the activities of insects affecting the health of man are reported by the Chief of the Bureau of Entomology of the U. S. Department of Agriculture in his annual report recently issued. In mosquito investigations in Louisiana a species of mosquito hitherto considered a non-carrier of malarial infection was proved to be a carrier. Studies have been made of malaria, and measures are being evolved to meet plantation conditions.

The "starvation" plan, aimed to exterminate the spotted fever tick of the Bitter Root Valley, Montana, was followed during the year with encouraging success. The plan consists of the removal of the domestic hosts of the adult tick from the infested areas. The bureau also conducted a campaign of extermination against ground squirrels and other rodent hosts of the immature ticks.

The report directs attention to the demonstrations of the bureau specialists that the breeding of flies in manure can be prevented by treating the substance with calcium cyanamid and acid phosphate, which at the same time increase the fertilizing value of the manure.

The bureau also conducted investigations into methods of lessening fly infestation in packing establishments operated under the meat inspection service of the department.

DO YOU KNOW THAT

- A little cough often ends in a large coffin?
- Bodily vigor protects against colds?
- Careless sneezing, coughing, spitting spread colds?
- Open-air exercise cures colds?
- Colds sometimes get well in spite of the excessive use of alcoholic beverages?
- Overheated, air-tight rooms beget colds?
- Neglected colds often forerun pneumonia?
- Persistent, oft-repeated colds, indicate bodily weakness?

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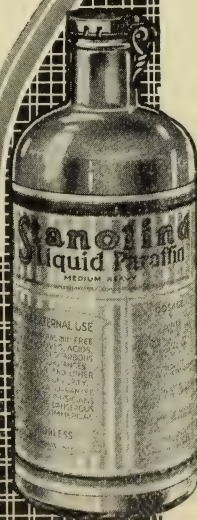
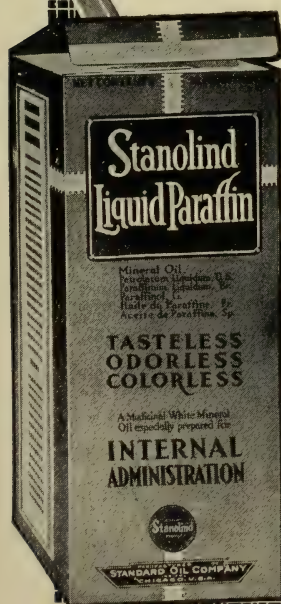
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THIS Directory is maintained mainly for the benefit of local firms seeking the patronage of physicians and their families. Only well established and reliable concerns will be represented, and doubtless the space at our disposal will be constantly in demand. In responding to these exploitations, the reader will find it mutually advantageous to mention the MARYLAND MEDICAL JOURNAL.

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The most recent fraud practiced in regard to this product is an attempt to profit by the renown of the firm of Sander & Sons. In order to foist upon the unwary a crude oil, that had proved injurious upon application, the firm name of Sander & Sons is illicitly appropriated, the make-up of their goods imitated, and finally the medical reports commenting on the merits of their excellent preparation are made use of to give the desired luster to the intended deceit.

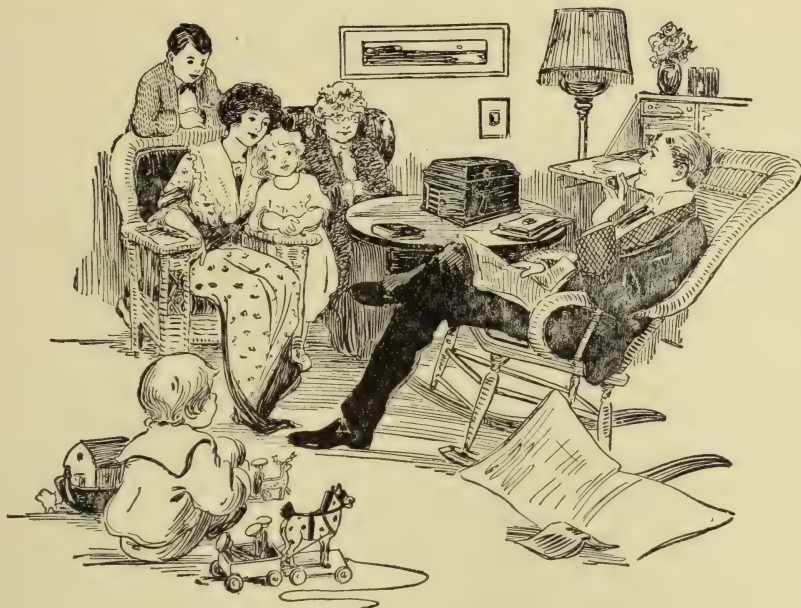
This fraud, which was exposed at an action tried before the Supreme Court of Victoria at Melbourne, and others reported before in the medical literature, show that every physician should see that his patient gets exactly what he prescribed. No "just as good" allowed.

Increases the Physiologic Efficiency of the Stomach.

IN no way is better shown the trend of modern medicine to revive and reinforce—rather than to supersede—the natural, physiologic forces of the body, than in the present day treatment of functional gastric diseases. Only a short time ago there was one routine combination that was applied with almost religious fidelity in each and every case of stomach trouble, and that was pepsin and dilute hydrochloric acid. Fortunately an awakening came, and instead of supplying an artificial digestant, the practice today is to use measures that encourage the stomach to do its own work.

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TO

Medical Advertisements

PAGE II

tions, the improvement obtained is as permanent as it is pronounced.

It is not difficult therefore to understand the place Seng has won in the regard of many a physician as the remedy of choice in all atonic forms of indigestion.

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THE EARLY DIAGNOSIS OF COMMUNICABLE DISEASE.*

By Matthias Nicoll, Jr., M.D., Secretary State Department of Health, New York.

NOTWITHSTANDING the great strides made by medical science of late years in the discovery of new diagnostic methods and in the perfecting of existing ones, it must be acknowledged that the opportunities for making use of these methods are very unequally distributed. The practitioners of the large cities not only have laboratory facilities near at hand, but also an abundance of clinical material through the study of which they may become familiar with the symptom-complex of the communicable diseases. The practitioner of the small cities, towns and villages is often dependent for his clinical knowledge of such diseases on written descriptions or the observation of a few cases, except during local epidemics, at which time there is little opportunity for a careful clinical study, while the use of laboratory facilities must often of necessity entail a good deal of time and trouble.

With the rapid growth of the facilities furnished by the State Laboratory and the encouragement to establish a large number of local laboratories to be approved by the State, one by one these disadvantages will, doubtless before long, cease to exist, while the opportunity to study, if even for a short time, a large number of cases of the communicable diseases will be furnished by the various courses for health offices, the scope and value of which are certain to be increased.

Those who elect to devote their lives wholly or in part to the service of the public health assume a great responsibility, for which the material rewards are not and perhaps never will be commensurate with the work required, but must lie largely in the personal satisfaction that comes from a task well done, especially in the service of humanity. Keep constantly before you the fact that upon your knowledge, efficiency and devotion to duty will often depend the health and lives of many persons within your jurisdiction.

Study every case of communicable disease with all possible care—none, however apparently trivial, is unworthy of it. Note the peculiarity of onset, the distribution and character of the eruption (if present) on the mucous membrane as well as on the skin, the course of the fever, constitutional symptoms, complications and sequelae.

With what unseeing eyes our clinical observations are made can be no better appreciated than by thinking of the millions of cases of measles that have passed before generation after generation of physicians without the recognition of the almost constant presence of the so-called Koplik spots.

In the diagnosis of a difficult case or one with which you have little familiarity, let your pride of opinion be tempered with humility, but when in doubt as to the possible presence of a serious communicable disease, never hesitate to take every precaution for the protection of the community, even though subsequent events prove them to have been unnecessary and your reputation as a diagnostician suffers in consequence.

Not one of us is sufficiently wise or experienced to express a definite opinion of the bacteriological cause of every pseudo-

*Read at the Annual Conference of New York State Sanitary Officers, Saratoga Springs, June, 1916.

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membrane which occurs, especially in the throat, without the help of the laboratory. The greatest toxin producer known is a diphtheria bacillus originally cultured from a mild case of clinical tonsilitis. In every case, especially when the patient is a young child, which *may* be diphtheria, give antitoxin, take cultures and reserve your final decision until you have received a report from the laboratory. This advice has been so constantly given by the department that most of you will regard it as unnecessary to repeat it here. Yet in the past two weeks I have heard of a health officer who boasts that he never gives antitoxin until he has heard from the culture.

During local epidemics of diphtheria, especially in school children, every sore throat of whatever clinical character should be suspected to be diphtheria, and treated accordingly. When pseudomembranes persist after an adequate dose of antitoxin for days and weeks, and reports from the laboratory are all *negative*, do not continue to give antitoxin or blame the bacteriologist, but sent a smear to be stained and examined for the presence of the anaerobic bacteria, which are the cause of Vincent's angina.

Beware of croup! If in addition to the symptoms indicating laryngeal involvements there is present the smallest patch on a tonsil, *the case is diphtheria*, and *should be so treated*. Again, if there is no such patch, but the ordinary remedies of heat and emetics fail to bring relief within a reasonable time, that case, too, in all probability is diphtheria, and should be so treated. Let me here remind you that in taking cultures from the latter case the swab should be slightly bent and the culture taken from the *interior* of the larynx, otherwise many cases of true laryngeal diphtheria will give negative cultures.

Whether or not the organism of scarlet fever has finally been discovered as claimed by Mallory, I venture to prophesy that sooner or later it will be established that the symptom-complex of the disease is dependent for its full development partly on the action of streptococci, especially those of the hemolyzing type; in other words, upon the combined action, symbiosis, of the organisms.

Streptococcus infection of the throat, wounds and uterus when accompanied by an eruption cannot be distinguished by any means known at the present time from scarlet fever, and even if there is not the slightest evidence of previous exposure to be obtained, such cases should be regarded as scarlet fever, and handled accordingly.

The recognition of the average case of scarlet fever presents no difficulties except to those with little or no experience with the disease. The diagnosis of a typical case often presents one of the most baffling problems in clinical medicine. However poorly marked elsewhere, the eruption, with the rarest exceptions, is always present in front of the axille, in the groins and on the back. It is very infrequently seen above the chin-ear line. The lymphatic nodes of the cervical region, axille and inguinal region are more or less enlarged after the first 48 hours. The typical evolution of the mucous membrane of the tongue may occasionally be lacking; when present it is one of the most reliable diagnostic signs.

I do not believe that scarlet fever can be present without *some* involvement of the pharynx, although in certain cases this may not be well marked. On the other hand, there is a good deal of evi-

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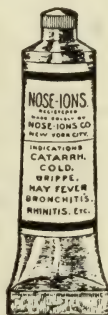


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dence which goes to show that scarlet fever may occur, and even in a severe and sometimes fatal form, with involvement of the throat alone, and without an eruption on the surface of the body.

I wish to emphasize the fact that the eruption of scarlet fever in the vast majority of cases persists for at least 24 hours, and one should avoid making a diagnosis of the disease on the presence of an eruption which disappears in a few hours, especially if the throat is normal. In making a differential diagnosis between scarlet fever, German measles, measles, serum rashes and rashes of intestinal origin one must take into account all the symptoms and signs present as well as those which are lacking, and base the final judgment on the preponderance of evidence for or against each disease; but even with the greatest experience and with thorough examination, it is sometimes impossible to form a definite opinion, and in such cases it is the absolute duty of the health officer and physician to take such measures as will protect the public against the consequences of turning loose a case of communicable disease because it was thought to be some harmless and non-infectious condition.

Epidemics of septic sore throat are explosive in character. The virulence of the infection varies in different epidemics as well as in individuals in the same epidemics; the symptomatology is so variable that it is hardly possible to give a concise description of the disease. Thus in the same epidemic there will be many cases of mild and severe pharyngitis, of mild and severe tonsillitis, of the catarrhal, pseudomembranous or follicular type. There is always a decided tendency to involvement of the cervical nodes, especially during convalescence, while general septic peritonitis is not an unusual and fatal complication. In many epidemics there are a certain number of cases which cannot be distinguished from scarlet fever. The presence in the throat, as shown by culture, of streptococci of the hemolyzing type serves to confirm the nature of the disease, but the principal factor which should arouse suspicion and on which a diagnosis should be based is the sudden occurrence of a large number of cases of sore throat in a community, which in the vast majority of cases signifies a milk supply infected with streptococci of human origin.

German measles and varicella are of importance, principally on account of the frequency with which they are confused with much more serious diseases—the first with scarlet fever and measles—the second with smallpox.

German measles comes in waves—usually with long intervals between, and affects a large number of people, adults as well as children. The first few cases are frequently not recognized or diagnosticated as measles or mild scarlet fever. This is quite excusable, but the recognition of the disease should not be long delayed with careful observation of individual cases. A few cases cannot be definitely differentiated from scarlet fever and measles. The main points upon which such differentiation should be based are briefly as follows: In the scarlatini form type of German measles the eruption usually involves the face, which is an extremely rare occurrence in scarlet fever. Even with a vividly red eruption involving the entire body, the fever is very much lower than would be the case if such an eruption were due to scarlet fever, and the pulse rate usually so high in scarlet fever is but little accelerated. The eruption is apt not to be uniform, but may resemble measles on one part of the body and scarlet fever on

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another part. Unfortunately, this sometimes also occurs in scarlet fever.

In German measles the throat may be remarkably reddened and extremely painful—a fact often not dwelt upon in descriptions of the disease. The tongue is not that of scarlet fever, while the presence of enlarged cervical nodes is characteristic of the disease, provided other causes are not present to account for it, notably pediculosis of the scalp. Finally, if one can make a blood count and microscopic examination, the lack of leucocytes points to the presence of German measles. I believe that determination of the presence or absence of the so-called inclusion bodies, as first described by Döhle, is of decided value in helping to arrive at a differential diagnosis. Save for the absence of Koplik spots and the presence of enlarged post cervical nodes, German measles may resemble true measles so closely as to be indistinguishable.

In the vast majority of cases the prodromata of German measles are much less marked, or may pass unnoticed. The fever is lower, the eruption less general and usually of a somewhat different shade of color, while the catarrhal symptoms in the conjunctivae and tracheo-bronchial tract are slight or absent.

Between varicella and smallpox the differential diagnosis is usually simple, and rests largely upon the simultaneous presence on a circumscribed area of skin of papules, vesicles and crusts. The fever of varicella is usually slight, but it may be very high and accompanied by marked constitutional symptoms.

Rarely in varicella there may be more or less general pustulation and still more rarely a gangrenous involvement of the lesions, such cases giving the greatest concern to the diagnostician. In a number of instances in New York city resort has been had to the inoculation of some of the contents of a lesion into the skin of a monkey as a means of differential diagnosis—a “take” indicating the presence of smallpox.

I shall not dwell here on the diagnosis of typhoid fever, except to urge you to suspect all cases of continuous fever and take blood for the Widal test, not once, but as long as the fever lasts, or until a positive report is obtained, or the febrile condition otherwise definitely accounted for. As a matter of routine it is well to send also to the laboratory a properly-made blood smear to be examined for malarial parasites, especially in the case of young children who are running a continuous fever.

Those who have a laboratory near at hand should also take blood cultures, a procedure, however, which requires a certain amount of practice and training in asepsis.

From the study of the recently-compiled statistics of bacteriologic examination made in the State outside of the large cities one is led to believe that a rural practitioner possesses some peculiar methods of recognizing pulmonary tuberculosis without the aid of sputum examinations not known to the city physicians, or else that the diagnosis of pulmonary tuberculosis is a matter of indifference, perhaps on account of the lack of proper provisions for its treatment.

Granted that these cases should be treated in sanatoria, room in which is very often unobtainable, nevertheless much may be done in the home not only for the patient himself, but for the protection of the other members of the household.

Upon sputum examination, if necessary repeatedly made, must rest the definite recognition of many cases the nature of which is

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otherwise unsuspected, and not until there is a full realization on the part of the public of the great number of cases of pulmonary tuberculosis demanding hospital care will the provision for such care be forthcoming in full.—*Health News*.

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The U. S. Public Health Service found 78 per cent. of the rural homes in a certain county unprovided with sanitary conveniences of any kind?

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Poor health is expensive?

The U. S. Public Health Service has reduced malaria 60 per cent. in some localities?

The death rate from typhoid fever in the United States has been cut in half since 1900?

Pneumonia kills over 120,000 Americans each year?

Flyless town has few funerals?

The well that drains the cesspool is the cup of death?

The hand that carries food to the mouth can also carry disease germs?

Health first is the highest form of safety first?

Tuberculosis and poverty go hand in hand?

The U. S. Public Health Service will send a booklet on flies and disease gratis to all applicants?

The breast-fed baby has the best chance?

Physical fitness is preparedness against disease?

Pneumonia is a communicable disease?

Cockroaches may carry disease?

Intelligent motherhood conserves the nation's best crop?

Heavy eating, like heavy drinking, shortens life?

The registration of sickness is even more important than the registration of deaths?

The U. S. Public Health Service co-operates with State and local authorities to improve rural sanitation?

Many a severe cold ends in tuberculosis?

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Seventy-six out of eighty-seven cases of typhoid fever which occurred in a recent outbreak have been traced by the United States Public Health Service to infected milk? Had the first cases been reported to a trained health officer, the outbreak could have been stamped out promptly. When will we learn that disease prevention is sure and cheap?



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LOCAL DIRECTORY

THIS Directory is maintained mainly for the benefit of local firms seeking the patronage of physicians and their families. Only well established and reliable concerns will be represented, and doubtless the space at our disposal will be constantly in demand. In responding to these exploitations, the reader will find it mutually advantageous to mention the MARYLAND MEDICAL JOURNAL.

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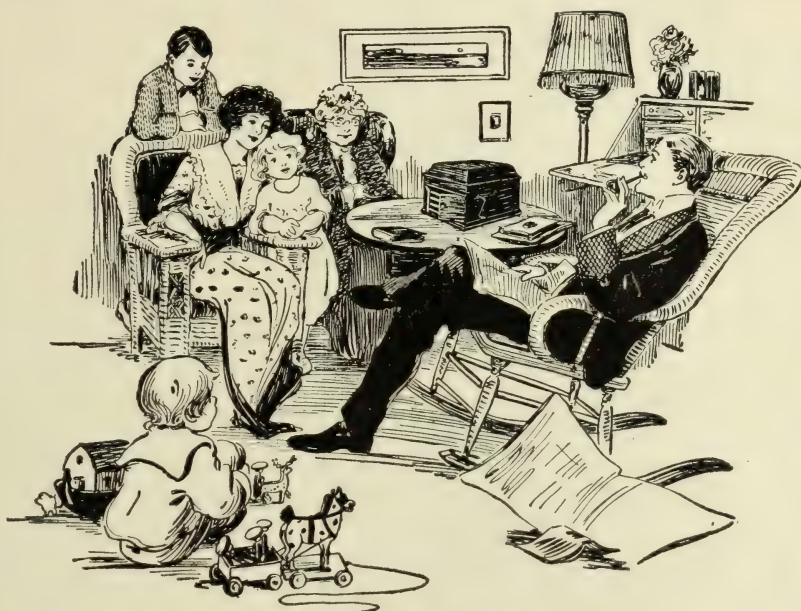
The most recent fraud practiced in regard to this product is an attempt to profit by the renown of the firm of Sander & Sons. In order to foist upon the unwary a crude oil, that had proved injurious upon application, the firm name of Sander & Sons is illicitly appropriated, the make-up of their goods imitated, and finally the medical reports commenting on the merits of their excellent preparation are made use of to give the desired luster to the intended deceit.

This fraud, which was exposed at an action tried before the Supreme Court of Victoria at Melbourne, and others reported before in the medical literature, show that every physician should see that his patient gets exactly what he prescribed. No "just as good" allowed.

The Recovery from Typhoid.

IN spite of the improvements in general sanitation, typhoid fever still continues to exist, and is especially prevalent during the fall and early winter months. It is more than probable that most cases occurring in the larger cities are the results of infections contracted at the summer vacation resorts, where the water and food supplies are not as carefully safe-guarded as in urban communities, although many forms of treatment, designed to abort or cut short the disease, have been advocated from time to time, it is indeed doubtful whether such regulation of the infection has ever been accomplished. As the average course of Typhoid is from four to six weeks, it is scarcely to be wondered at that the patient usually emerges from the attack in a generally devitalized condition. This is accounted for not only by the general toxemia incident to the bacillary infection, but also because the practically exclusive milk diet generally adopted deprives the patient of the natural food iron which ordinarily maintains the ferric sufficiency of the blood. Some degree of anemia is therefore almost always in evidence when convalescence is first established. The quickest and safest way to overcome this blood deficiency and to hasten revitalization and a

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"THE salicylates have long been regarded by the profession as a potent anti-rheumatics, whose efficacy is unapproached by any other known remedy in the treatment of neuralgia, rheumatism, sciatica and other neurotic lesions. Tongaline, from the character of its ingredients, is bound to possess special alterative and eliminative action, with positive affinity for the excretory system of glands, necessarily producing a thorough elimination of the toxic and morbid products of the system through the various emunctories. For rheumatism and gout; sciatica and lumbago, it is the remedy par excellence; its action being absolutely invaluable. In these diseases it thoroughly eliminates the toxæmia which, under other treatment, seems ever present, hindering convalescence and producing relapses. Tongaline here acts as an efficient alterative eliminative, removing causes and effecting resolution."

Promoting Tissue Resistance in Chronic Bronchitis.

A VALUABLE therapeutic point in the treatment of chronic bronchitis, and particularly the bronchitis of the aged, is the aid given by tissue reconstructives. Thus, Cord. Ext. Ol. Morrhuae Comp. (Hagee) administered systematically to this class of patients exerts a marked effect on the bronchial condition, reducing the secretion and irritation, largely through its general reconstructive force. The bronchial and pulmonary tissues' resisting power—that is, the power to throw off infection—is augmented, an effect shown by improvement in the cough, irritation and amount and character of the secretion.

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WHAT physician would not welcome a convenient vest-pocket reference book on anti-toxins, serums and vaccines (bacterins)? A compendium of this kind is being distributed to physicians, without charge, by Eli Lilly & Co. It contains, in addition to a price list of biological products, brief instructive sections on infective and infectious diseases, the development of immunity, specific therapy, serums and antitoxins, anaphylaxis, indications, dosage, and keeping qualities of biologicals. The book is thoroughly cross-indexed and designed to supply answers to practical questions that arise daily in the administration of biological products.

This handy manual was prepared for free distribution, and will be found a convenient vest-pocket reference work. It is printed on thin paper, occupies little space, and contains much information of value on vaccine and serum therapy. A copy will be sent without charge to readers of this journal on request made to Eli Lilly & Co.

Two Strengths of Pituitrin.

As is well known to medical practitioners, Parke, Davis & Co. have for several years manufactured a standard pituitary extract under the name of "Pituitrin." The product is prepared from the posterior lobe of the pituitary gland, and has come into extensive use in the treatment of delayed parturition or uterine inertia. Being specifically intended for use in obstetrical work, this preparation will hereafter be designated in label and literature as Pituitrin "O" (Pituitrin obstetrical).

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INDEX

TO

Medical Advertisements

PAGE II.

preparation of the pituitary gland, to be known as Pituitrin "S" (Pituitrin surgical). This product is approximately twice the strength of the former, and is indicated specifically in the treatment of post-operative intestinal paresis, vesical atony, hemorrhage and shock. Because of its exceptional potency it should not be used in obstetrical practice. In order that it may be readily distinguished from Pituitrin "O" (obstetrical) the carton labels are printed with red letters on white paper.

Both Pituitrin "O" and Pituitrin "S" are physiologically tested for activity.

Pituitrin "O" is supplied in ampoules of 1 mil. (1 Cc.) and ½ mil. (½ Cc.), respectively, and in bottles of ½ ounce. Pituitrin "S" is supplied in ampoules of 1 mil. (1 Cc.) only.

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Colds that linger invariably owe their persistence to inability of the body to exert sufficient resistance to overcome germ activity. Recovery, in consequence, is always largely a question of raising the general vitality and increasing bodily resisting power. To accomplish this, no remedy at the command of the profession is so promptly effective as Gray's Glycerine Tonic Comp. Under the use of this dependable restorative and reconstructive, the appetite is increased, the digestion improved, the nutritional balance restored, and the vital resistance so raised that the body can control infectious processes, and establish a safe and satisfactory convalescence.

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On the other hand, many a chronically constipated infant grows up in his ways into an intractably constipated adult, so that anatomic structure is not the only consideration.

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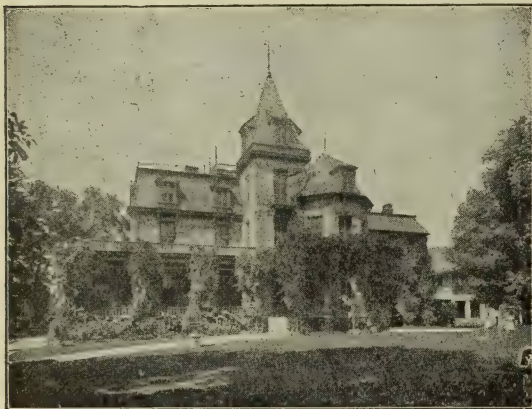
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COMMON COLDS.

THE most prevalent illness in the United States is the common cold, a disease group included under one name and considered of such minor importance that vital statistics do not record the enormous number of persons who annually are subjected to suffering, inconvenience and economic loss thereby. Remarkable as it may seem, the widespread familiarity with this condition has bred a contempt which hides its seriousness, yet when the sum total of the ravages committed by common colds is made, it becomes evident that instead of being a group of trivial affections, common colds must be classed as serious diseases.

The phrase "common colds," like "charity," covers a multitude of sanitary sins, and, curiously enough, the name has been applied to a group of affections which, far from depending absolutely on cold, are frequently the direct result of living in close, overheated surroundings having a lower relative humidity than the driest desert known to man.

The word "colds" means an acute infection of the lining membranes of the nose, tonsils, throat and larger bronchial tubes. The process may be even more extensive and amount to a general infection of the entire body. All of the breathing apparatus excepting the smaller terminal portions in the lungs may be involved, and as a matter of fact the disease may, and often does, spread to these, thus producing pneumonia. In this connection it may be pointed out that pneumonia kills more people in the United States than any other disease excepting tuberculosis and heart disease. Many pneumonias begin as a common cold. Colds do not produce tuberculosis, yet, unfortunately, what is considered as a cold may be in reality the first symptoms of the white plague.

The causes of colds are multiform, and not entirely understood. In every case, however, they are dependent upon the growth and activity of living germs which are always received from other people. It is true that almost everybody harbors disease organisms in the mouth and nose, and that these under favorable conditions will produce a cold in their host. But these germs in every case were received from some other person. In other words, colds are infectious. It used to be thought that sitting in a draft or a prolonged stay in the swimming-pool would produce a cold. This is erroneous, but the chilling of the body which the draft produces and the weakening of the vital forces caused by too long a swim lower the powers of resistance and permit germs which have hitherto been harmless to their host to produce their disastrous effects.

It is not necessary to describe a cold. Everybody is familiar with it in all its variations, from the simple ordinary coryza, which is a polite running at the nose, to the sore throat, the aching chest, fever, and generally "knocked-out" feeling. The cough, the sneeze, the headache and the varying degrees of inefficiency which a cold produces are, alas, only too well known. Common colds occur in epidemics, and are distinctly contagious. They sweep through an entire household, an entire city, an entire State, attacking the young, the adolescent, the middle-aged, and frequently carrying off the aged, the weak and the debilitated. Schools, factories, stores are suddenly crippled by epidemics of this sort, and the complications and serious disorders following the disease add to the great economic loss produced in this way. Infection of the

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may often be readily traced to imperfect digestion of protein or fat, to a deficiency of total solids in the diet, to a lack of energy, or to a diet containing starchy substances. While this condition is not necessarily a serious one, a natural elimination with soft, smooth stools of a good character is much to be desired, and has no little bearing on the general health of the infant.

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cavities beneath the cheeks and brows, ear derangements, chronic lung infections, rheumatism, heart disorders, kidney impairment and depressed vitality may all follow in the train of this widespread infection.

To prevent a cold it is necessary, first of all, to keep the body resistance at a high point of efficiency. This means that the body machinery should be kept in good order at all times. Good, wholesome food in proper amount, plenty of sleep, the careful attendance to the voiding of the body wastes, the taking of regular exercise in the open air, keeping the body clean, keeping the mouth and nose clean, the avoidance of hot, stuffy, dusty rooms, the avoidance of exposure to sudden changes of temperature, the prevention of the chilling of the body either by cold or wet, are all protective measures. It should be borne in mind, however, that even robust persons may contract colds from people who have them.

The germs of colds leave the body in the secretions of the mouth and nose. They enter the body through the same route. Thus a careless sneezer and the person who does not cover his mouth and nose when he coughs are breeders of these infections. The little living bodies which cause colds are so small that a million could rest on the head of a pin. When a person coughs or sneezes a fine spray, carrying with it untold numbers of these germs, is spread into the surrounding atmosphere to a distance of several feet, and may be easily taken into the mouth and nose with the respired air. More direct contact, such as by kissing, the common drinking cup, the common roller towel, by pipes, toys, pencils, fingers, food and other things which have been contaminated by the mouth and nose secretions of a person having a cold, may also carry the disease.

It is an obligation on the part of persons having colds to see to it that they do not spread these colds to somebody else. The person who neglects to cover his nose and mouth when he sneezes and coughs, the careless spitter, the person who permits his germ-laden discharges to contaminate things which are going to be handled by other people is a menace to the community. If such a person uses public swimming-pools, if he is not amenable to reason and persists in distributing his infection, he should be avoided as a spreader of pestilence.

A good deal has been said about hardening people, so that they will not contract colds. There is an element of danger in this, since to expose a weak person to the rigors of cold baths and cold drafts is apt to lower resistance, thus favoring the very condition which it is desired to avoid. At the same time, it should not be forgotten that the Arctic explorer does not ordinarily have colds so long as he stays out in the open, and that it is not the engineer and fireman in the cold, drafty cab who have colds, but those who ride in the close, dusty, overheated coaches behind. When all is said, it must be admitted that dusty, unventilated rooms perhaps play the greatest role in producing colds.

Since colds are a serious condition, they should be treated as such. A great many people think that they have an infallible remedy for breaking up a cold. This may be harmless in itself, but usually it is not, and consists of a combination of harmful drugs and alcohol, the latter usually preponderating. The sufferer takes these preparations in large quantities, and if he is strong enough he may survive them and eventually get the best of his cold. Self-medication or medication by untrained persons is al-

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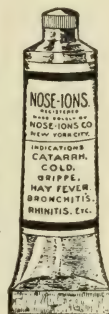


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ways dangerous. It is especially dangerous to those having colds, and should always be scrupulously avoided. As a rule, much time, inconvenience and suffering will be obviated by consulting an intelligent physician promptly. If this is not practicable, a brisk saline may be taken and the patient put to bed. This gives his body an opportunity to regain its vitality and at the same time isolates him from other people. The sick room should be well ventilated and the windows so opened as to keep the air moving freely. It is also wise to moisten the air a little bit by putting a pan of water on the radiator or over the register or on the stove. The handkerchiefs and bedding used by the patient should be sterilized by boiling. Kissing and the use of drinking cups and towels, etc., in common with other members of the household should be forbidden, it being borne in mind constantly that colds are infections and readily spread from one person to another.

CONSIDER THE FURNACE.

THEORETICALLY this is a machine for the economical production of heat. If the proper amount of the proper kind of fuel is properly put into it, if the ashes are properly cleaned out, if the drafts are properly managed, the chances are that it will heat the house properly. If, on the other hand, too much or too little fuel is put into it, if the fuel contains too much non-inflammable material, if the fire is not kept clean of ashes, or if the dampers are badly regulated, the furnace operates inefficiently or ceases working altogether. Perhaps the most important thing next to putting in the fuel is to clean out the ashes. If these are allowed to accumulate in the ash pit, the grate bars may be burned out.

Food is taken into the human body for the purpose of producing heat. The standard of its value is the number of heat units it contains. If too little fuel is taken into the human body, an insufficient number of heat units to operate it are received, and it works inefficiently. If, on the other hand, too great an amount of food is taken, the body becomes clogged and works just as inefficiently as if it had received too small an amount. The most important thing is to remove promptly all of the waste materials remaining after the food has given up its heat units. If too great an amount of this debris is allowed to remain, the fires of the body are in danger of being put out by these poisonous materials. The elimination of these materials is one of the functions of the intestinal canal. One of the requisites of good health is an educated intestinal apparatus. Perhaps this is even more important than an educated set of brains. Certainly an educated set of brains cannot work effectively so long as the intestinal apparatus is badly operated.

Man in our present state of civilization is obliged to pay particular attention to functions which in a state of nature took care of themselves. A robust man engaged in active exercise in the open air may commit dietary indiscretions which would be exceedingly harmful to a sedentary worker. Exercise as a part of the daily life is, however, absolutely necessary for both. Plain, wholesome food is just as necessary for the brain worker as for him who labors with his hands. Above all, both must keep the human furnace well shaken down and without accumulation of ashes and debris in order that the fires of life may burn brightly and steadily.

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MORTALITY FROM CANCER AND OTHER MALIGNANT TUMORS.

Washington, D. C., January 15, 1917.—The mortality from cancer and other malignant tumors in the death-registration area of the United States has been increasing almost continuously for the past fifteen years. It is greater in urban than in rural localities; among females than among males; among whites than among negroes; and among persons in middle life and old age than among those in early life. Deaths due to cancer of the stomach and liver represent more than three-eighths of the total.

These are among the significant facts brought out in a special report, "Mortality from Cancer and Other Malignant Tumors in the Registration Area of the United States, 1914," soon to be issued by Director Sam L. Rogers of the Bureau of the Census, Department of Commerce.

The total deaths from cancer and other malignant tumors throughout the registration area (which contains approximately two-thirds of the total population of the United States) in 1914 numbered 52,420, corresponding to a death rate of 79.4 per 100,000 population. This figure represents an almost continuous increase—amounting to 26 per cent for the entire period—since 1900, when the rate was 63. How much of this increase has been due to more accurate diagnosis and greater care on the part of physicians in making reports to registration officials, and is thus apparent rather than real, it is impossible to estimate. For registration cities having 10,000 inhabitants or more in 1910 the rate averaged 88 per 100,000, but for smaller places and rural localities in the registration States it averaged only 69.6.

HIGH AND LOW RATES FOR STATES.

Among the States the lowest five rates—45.8, 46, 48.9, 51.5 and 57.8 per 100,000 population—are shown for Utah, Kentucky, Virginia, Montana and North Carolina, respectively; and the highest five—109.9, 107.6, 101.2, 100.8 and 97.9—for Vermont, Maine, Massachusetts, New Hampshire and California, respectively. (The rate for North Carolina relates only to places which had 1000 or more inhabitants in 1910.)

At least a part of the difference between the high and low rates is accounted for, first, by the fact that in some States the average age of the population is considerably greater than in others, cancer being a malady much more likely to attack persons at advanced ages than those in the earlier periods of life, and second, by the fact that in several of the States named there are considerable proportions of colored population, among whom the mortality from cancer is apparently lower than among whites.

COLOR, SEX AND AGE.

The death rate for whites throughout the registration States was 80 per 100,000, as against only 56.2 for the colored population.

The death rate from cancer among women, 96.8 per 100,000, was more than 50 per cent. greater than the corresponding rate for men, 62.4.

For persons under 25 years of age the death rate was only 2.8 per 100,000 corresponding population; but for the higher ages it



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is very much greater, increasing rapidly from each age group to the one next above. Thus, for persons 25 to 34 years of age it was 13.9 in 1914; for those 35 to 39, 42; 40 to 44, 78.6; 45 to 49, 128.6; 50 to 54, 199.7; 55 to 59, 305.9; 60 to 64, 393.1; 65 to 69, 516; 70 to 74, 672.3; 75 to 79, 766.6; 80 to 84, 889.6, and 85 and over, 875.6.

CANCER OF THE STOMACH AND LIVER.

Among both males and females, cancer of the stomach, liver, pharynx and esophagus accounted for a greater proportion of the total deaths from cancer—approximately 47 per cent. among males and 32 per cent. among females—than is shown for any other group. The death rates from this class of cancers were 29.6 per 100,000 for males and 30.7 for females.

CLASSIFICATION OF DEATHS FROM CANCER.

The following table shows, for the death-registration area, the number of deaths from cancer and other malignant tumors in 1914, classified according to the organ or part of the body affected, together with the rate per 100,000 population and the percentage which the deaths from each class and subclass of cancers formed of the aggregate:

Seat of Disease.	Deaths, registration area, 1914.		
	Number.	Rate per 1000 population.	Per cent. of aggregate.
Cancer and other malignant tumors (aggregate).....	52,420	79.4	100.0
Cancer of the buccal cavity (total).....	2,270	3.4	4.3
Cancer of the—			
Lip	376	0.6	0.7
Tongue	614	0.9	1.2
Mouth	230	0.3	0.4
Jaw	851	1.3	1.6
Others of this class.....	199	0.3	0.4
Cancer of the stomach, liver (total).....	19,889	30.1	37.9
Cancer of the—			
Pharynx	58	0.1	0.1
Esophagus	605	0.9	1.2
Stomach	12,768	19.3	24.4
Liver and gall bladder.....	6,458	9.8	12.3
Cancer of the peritoneum, intestines, rectum (total)	6,745	10.2	12.9
Cancer of the—			
Mesentery and peritoneum.....	485	0.7	0.9
Intestines (except rectum).....	4,055	6.1	7.7
Rectum and anus.....	2,171	3.3	4.1
Others of this class.....	34	0.1	0.1
Cancer of the female genital organs (total).....	8,152	12.4	15.6
Cancer of the—			
Ovary and fallopian tube.....	451	0.7	0.9
Uterus	7,470	11.3	14.3
Vagina and vulva.....	194	0.3	0.4
Others of this class.....	47	0.1	0.1
Cancer of the breast.....	5,423	8.2	10.3
Cancer of the skin.....	1,957	3.0	3.7
Cancer of other organs or of organs not specified (total)	7,184	12.1	15.2
Cancer of the—			
Larynx	341	0.5	0.7
Lung and pleura.....	371	0.6	0.7
Pancreas	686	1.0	1.3
Kidneys and suprarenals.....	538	0.8	1.0
Prostate	784	1.2	1.5
Bladder	1,014	1.5	1.9
Brain	141	0.2	0.3
Bones (except jaw).....	497	0.8	0.9
Testes	121	0.2	0.2
Others of this class.....	3,491	5.3	6.7

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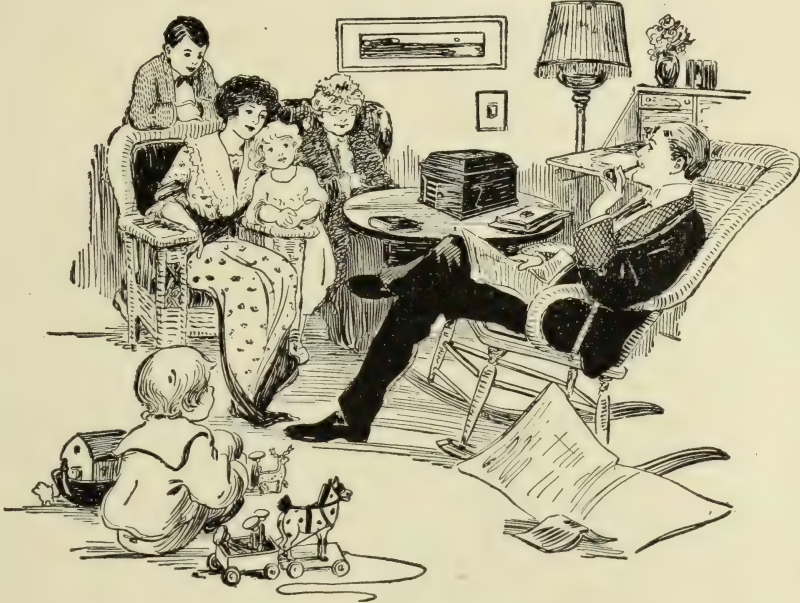
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Further literature on this subject on request. Van Horn & Sawtell, 15-17 East 40th street, New York City.

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the profession, and many physicians advise the systematic use of Cord. Ext. Ol. Morrhuæ Comp. (Hagee) for this purpose. It would appear that cod-liver oil has a definite predilection for the tissues of the lungs and bronchi and adds materially to their powers of resistance against germ invasion. That this increase of resisting power means a diminution of susceptibility to colds and their consequences is very evident, and points plainly to the need for a cod-liver oil preparation such as Cord. Ext. Ol. Morrhuæ Comp. (Hagee) in those persons with the slightest susceptibility to bronchial and pulmonary infections. The superior feature of Cord. Ext. Ol. Morrhuæ Comp. (Hagee) is its palatability, which in no wise impairs its therapeutic efficacy.

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It has been shown that Ecthol (Battle) has a distinctive value in infections, and with many physicians its employment in both local and systemic infections is a routine practice. While this clinical fact is easily determined, the actual *modus operandi* of this agent within the tissues is not so easily understood, but it seems logical to assume that it increases the phagocytic power of the blood stream, thereby enabling the system to overcome the assault of the infectious organism. In systemic infections Ecthol (Battle) is administered internally throughout the patient's waking period, and in local infections with suppurative manifestations direct applications of it are made.

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tric disturbance or habitual addiction, the actual value of these advantages becomes all the more apparent. Pasadyne (Daniel), simply a concentrated tincture of *passiflora incarnata*, shows its calming power in all states marked by hypercærebration or exalted function of the nervous system. It may be used with a feeling of confidence in women and children.

The Making of Ampoules.

AN illuminating article on the manufacture of glaseptic ampoules of sterilized solutions, as conducted in the laboratories of Parke, Davis & Co., appears in a recent issue of *Therapeutic Notes*. It is noteworthy because of the emphasis placed upon the careful methods which are essential in the production of both solution and container.

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"The medicaments used in preparing solutions are treated with the most suitable solvents—e. g., oils, distilled water, or physiologic salt solution—and the solutions are invariably adjusted to a fixed standard of strength; that is, each contains a specific amount of medicament to a given volume, thus insuring accuracy of dose. The solutions are subjected to the process of sterilization, either by heat applied in an autoclave, at intervals, for four or five days, or by passage through a Berkefeld or Pasteur porcelain filter. They are then passed into sterilized bottles, and samples are submitted to the biological department for a series of sterility tests that extend over a period of five days.

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IN spite of all of the modern advances in scientific therapy, and the improvements in the general handling and management of acute infectious diseases, Acute Lobar Pneumonia still deserves the title ascribed to it by Osler: "The Captain of the Men of Death." There are, however, especially during the fall and

winter months, many cases of the lobular or irregular Pneumonia that so often complicates or follows La Grippe. When this condition supervenes it is more than likely to follow a sub-acute or chronic course and convalescence is frequently long delayed. Under such circumstances, in conjunction with treatment designed to hasten resolution, a general blood tonic and vitalizing agent helps materially to shorten the convalescent period. Pepto-Mangan (Gude) is of much value in this field, because it not only increases the solid elements of the blood, but also acts as a true tono-stimulant to the organism generally. As Pepto-Mangan is free from irritant properties and constipating action, it is especially serviceable in the reconstructive treatment of the devitalization following the Pneumonia of the aged.

Modern Treatment of Whooping Cough.

UP to 1916 there was a steady decrease in the number of deaths resulting from measles, scarlet fever and diphtheria, notwithstanding the increase in population, while the mortality from whooping-cough had increased. This fact is all the more pertinent when we realize that in the seventeenth century Willis, describing "chin cough," as the disease was then called, says that the mortality was gradually increasing, due to the fact that the treatment was drifting into the hands of quacks and old women largely because of want of successful treatment by the practicing physician.

Two hundred and thirty-eight years later, in the twentieth century, a remedy for whooping-cough appeared in the *British Medical Journal* over the signature of a physician. He recommended the wearing of garlic cloves in the stockings. The efficacy of the treatment is further impressed upon one by the statement that within a half hour after the garlic has been placed in the stockings a marked odor of garlic could be detected on the breath.

Sufficient evidence has now been collected to demonstrate the value of the modern treatment of whooping-cough by means of inoculations of pertussis vaccine for prophylaxis against and immunization in whooping-cough.

With the demonstration of the Bordet-Gengou bacillus as the causative organism in pertussis, attention was immediately directed toward specific medication; and the results of vaccine therapy as reported by the New York Whooping-Cough Clinic, under the direction of Drs. Williams and Luttinger, prove conclusively that at last the physician has a rational,

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SAFEGUARDING FOODS AND DRUGS.

IN the enforcement of the Food and Drugs Act during the last year, United States Department of Agriculture officials analyzed 29,833 samples of foods and drugs offered for interstate shipment and for import. A physical examination was made of samples from 76,468 shipments offered for import. Of these foreign shipments, 6353 were found to violate the law in some respects and were either excluded from the country or admitted only after the importers had relabeled them to comply with the law. Of the samples of domestic products analyzed, 3535, either because of the nature of the product or because the label on it did not tell the truth, were found to be in violation of the Federal law. In 1364 cases the department recommended to the Department of Justice that criminal prosecution be instituted against the manufacturers or that the goods be seized. In many cases where there was no evidence of intention to defraud, and where there was merely some easily remedied flaw in the wording of a label, the shippers, after being warned in hearings, voluntarily took steps which made their products fully comply with the requirements. In all, there were held 8715 such hearings, many of which resulted in the prosecutions indicated and the gathering of evidence for a large number of additional cases, which will be forwarded to the Department of Justice.

The Bureau of Chemistry, in its annual report, also calls attention to the fact that through the system of service and regulatory announcements now in use manufacturers are given due notice of the requirements and thus are enabled voluntarily to make their products conform to the law. In this way the Government achieves its purpose, frequently without entering into needless and very expensive litigation.

In the regulatory work, special emphasis has been given to the control of drug products and foods liable to spoilage and pollution. These frequently constitute a serious menace to health. The food inspectors have been instructed to be particularly watchful for interstate shipments of bad eggs, milk, oysters and spoiled canned goods, and false and fraudulently labeled medicines and spurious, synthetic drugs.

CURBING FRAUDULENT MEDICINES.

Attempts to counterfeit or adulterate imported drugs have been more common since the recent high price and scarcity of many of these products encouraged their imitation. It is interesting to note that of the 1036 cases terminated in the courts during the year, 198 were brought on account of the false and fraudulent labeling of medicines. In all of these medical cases, save five, the courts found for the Government, and this, it is believed, has exercised an important deterrent effect on the vendors of nostrums shipped from one State to another.

The work of controlling the fraudulent labels of medicines and mineral waters has been greatly strengthened by the establishment of a separate office to deal with these matters. At the request of the Secretary of Agriculture an officer of the United States Public Health Service has been detailed to take charge of this work. Moreover, through the close co-operation established with the foods and drugs officials of many of the States, the department was able to direct the attention of the local authorities to the presence of spurious drugs in their States, and as a result much of

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these fraudulent goods in the hands of local dealers and beyond the reach of the Federal authorities were destroyed by State and municipal officers, who in many cases prosecuted those responsible for the local traffic.

MILK, EGGS AND OYSTERS.

The co-operation in the sanitary control of the milk supply of small cities described in the report for last year has been extended in Illinois, Iowa, Missouri, Kansas, Nebraska and in New England: It is proposed to repeat this work year after year, extending it each year to new territory. In some localities bad conditions were found, due in the main to insufficient cooling and careless handling. Perhaps the best results of this work has been that it stimulated some of the local authorities to take up similar work independently, so that definite permanent improvement of the milk supply of a number of cities has resulted. The co-operative work on the control of the shipment of decomposed eggs described in the report of last year has been extended to cover much of the territory in which shipments originate, so that eggs are now candled before shipment far more than formerly and the spoiled eggs destroyed or fed to poultry and stock. At the same time information given to local officials has helped them to curb local traffic in eggs rejected in candling.

The Bureau of Chemistry, after making co-operative sanitary surveys of oyster beds, issued warnings against the interstate shipment of oysters from polluted and doubtful beds, and where these warnings were not regarded, undertook prosecution. As a result, interstate shipment from such territory was stopped.

OTHER ADULTERATIONS.

The campaign against the sweating of immature oranges and immature grapefruit so as to give the immature fruit the color of ripe fruit has been successful, largely because of the active help of the greater part of the citrus-fruit producers. Comparatively few sweated, immature oranges were offered during the last year, and it is believed the better quality of fruit resulted in a steadier market, so that the producer as well as the consumer benefited.

Other forms of adulteration not already mentioned that received especial attention are the adulteration of scallops and canned tomatoes with water, the substitution of colored starch paste for tomato sauce, the reprocessing of spoiled canned goods, the traffic in cull beans, in decomposed tomato product, in rancid olive oil, in wormy horse beans, the substitution of foreign fat for cacao butterine and the addition of cacao shells to cacao products, the adulteration of rice bran with rice hulls, the coloring of inferior macaroni and of plain noodles, the misbranding of domestic macaroni in simulation of imported goods, and the adulteration of oats with water or weed seeds.

CAMPAIGN AGAINST UNCLEAN DAIRY UTENSILS.

AN active campaign against the unsterilized milk can, pail, strainer cloth and separator, as contributing causes to high bacterial count in city milk, is to be carried on this season by the United States Department of Agriculture, in co-operation with the health and milk officials of a number of cities. Already health officers in 150 localities have accepted the department's offer to demonstrate to their local milk producers a simple home-made



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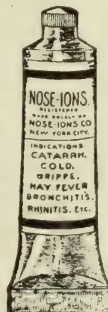
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sterilizer, costing not more than \$15, which if used on the farm will help guard the milk against this initial and serious contamination. How great a bearing sterilization of milk utensils on the farm has on the bacterial content of milk is shown by experiments which have proved that the average milk can, when washed in the ordinary way, may contain over 8,000,000,000 bacteria, and that almost every milk can so treated harbors millions of bacteria which give a high bacterial count and hastens the souring of milk.

The home-made sterilizer for dairy utensils which is to be demonstrated uses steam as a sterilizing agent. All that is required to develop steam enough to sterilize the ordinary dairy utensils is a two-burner kerosene stove, and there is nothing about the device which calls for special skill in its effective use. The department has 20 of these sterilizers, described in Farmers' Bulletin 748, and has offered to supply an outfit for a two weeks' demonstration to any local health or dairy official who will agree to show it in operation to the milk producers in his section.

The effectiveness of this sterilizer has been fully proved, both in the laboratory and on the farm. In one experiment 10 gallons of fresh milk were divided into two parts. Five gallons passed through a separator into a five-gallon can, both utensils washed in the ordinary way, showed at the end of an hour 1,880,000 bacteria per cubic centimeter. The other five gallons, passed through a separator into a can, after both utensils had been washed and sterilized by means of the home-made sterilizer, showed only 24,000 bacteria per cubic centimeter.

Experience shows that the bacterial count is thus materially reduced, while the producer finds that his milk does not sour so quickly and has an improved flavor.

The specialists of the Dairy Division are hopeful that the device, wherever it is demonstrated, will come into common use. It is believed that this sterilizer will find ready adoption among small dairymen because of its low cost of construction and operation, and because its use will tend to improve the quality and increase the keeping character of the milk.

PUBLIC HEALTH NURSING AND ITS INFLUENCE ON PUBLIC HEALTH.*

By C. Josephine Durkee, Director Division of Public Health Nursing, State Department of Health, New York.

For the purpose of this discussion, may I be permitted to define public health nursing as any activity in the field of sanitary science and preventive medicine which is found to be most efficiently and economically performed by a person with the training of a nurse, and the public health nurse as the person engaged in such work?

The nature of the work performed may vary greatly, but it will deal with conditions affecting the health of a considerable number of citizens, and will be corrective and preventive. It will also demonstrate the old adage that "An ounce of prevention is worth a pound of cure."

If we accept this definition, we may find ourselves classifying nurses by groups, as institutional, private duty, field visiting and

*Read at the Annual Conference of New York State Sanitary Officers, Saratoga Springs, June, 1916.

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public health nurses. Visiting nurses includes public health nursing. Public health nursing, as herein discussed, may or may not include bedside care. If it does include such care, it will be provided in the form of instruction rather than nursing the sick individual. It will make connections with all other existing health agencies a special feature of the work. To secure results the public health nurse is dependent upon the co-operation of the institutional nurse attached to hospitals, dispensaries and clinics, and upon the field visiting nurse attached to agencies for home bedside care of the sick. She is in reality a product of the experience of these other groups. Hospitals, dispensaries and clinics first found the need for the visiting nurse to the home in order to insure results from treatment at these places, and the result has been the evolution of the nurse specialist for investigation, teaching and the promotion of health agencies. The public health nurse, launched into a community for investigation, for follow-up care or for educational work, may go forth bravely for a time, although there is neither hospital, clinic nor bedside visiting nurse service available, but it is not very long before she finds that she cannot get results unless she has a free station to which patients may be referred for accurate diagnosis, advice and operative treatment. The patients cannot be induced in any considerable numbers to go to the office of private physicians for free treatment.

The history of public health nursing in New York State is not yet the record of a decade. The anti-tuberculosis propaganda, inaugurated in 1907 and 1908, has been the dynamic force which has developed much of the existing demand for nurses. Child hygienists in the school have been a close second dynamic agency. The infant welfare movement has probably met with the most sympathetic response of the three. Starting with but two public health nurses in the 57 counties in 1907, in five years the number was increased to approximately 90, at which time some of the most enthusiastic of the nurses found themselves facing the fact that investigation and education of the individual had resulted in a greater number of individuals demanding health and freedom from tuberculosis and correction of remediable physical defects than there was available treatment. In some places the nurse was obliged to discontinue the education of individuals and set about securing more hospital beds and free diagnostic and treatment stations. They are still at that work, because results cannot be secured without the skillful diagnostician and medical practitioner with his equipment for action. Placed in the field, the nurse has found the people who need medical care, and who are not known to the physicians. Touching the hem of the nurse's garment will not make them whole. So nurses have conducted campaigns to secure appropriations or raise funds to secure the free remedial treatment needed. * * * Public health work seeks to make a short cut to health, and the cut is named prevention. Prevention is accomplished only by attacking the condition early. If there is delay, it is too late to prevent. Then we must have the cure. When smallpox is encountered, vaccine is called for immediately; for diphtheria, the antitoxin goes with the physician. When a public health nurse goes forth to find what people are ill and why they are ill and to promote health, the skilled physician and his base of action must be within reach. She may not be able to take the physician to the patients, but she



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can get the patients to the physician, or to the station where he treats them in large numbers. * * *

Of the 57 counties in the rural districts we have 3 counties with dispensary service and no public health nurse; 16 counties with a public health nurse in some part of the county, but no clinic or dispensary service; 30 counties with neither dispensary nor nurse service; 8 with both dispensary and nurse service. All of them have medical school inspection, which is finding conditions that should be remedied. I therefore believe that to promote public health in this State the nurses now in the field must work to secure for rural districts dispensary and clinic service in the 16 counties that have the nurses, but no place to remedy defects and sickness found and to diagnose the illness discovered.

I present this subject at this meeting because I believe that if health officers and public health nurses will get together and work for this end it will be accomplished. * * *—*Health News*.

INCREASE IN PELLAGRA EXPECTED.

THAT there may be an increase in pellagra during the coming year on account of the rise in the cost of foodstuffs is the fear expressed in a statement issued by the U. S. Public Health Service. As a result of Government researches it was found that pellagra is produced by an insufficient, poorly-balanced diet, and that it can both be prevented and cured by the use of food containing elements in the proportion required by the body. The application of this knowledge greatly reduced pellagra in 1916 as compared with previous years. This reduction is believed by experts of the Public Health Service to have been due to improved economic conditions which enabled wage-earners to provide themselves with a better and more varied diet, and to a wider dissemination of the knowledge of how the disease may be prevented. It is feared, however, that pellagra may increase in 1917 by reason of an increase in food cost out of proportion to the prosperity now enjoyed by this country. The great rise in the cost of forage, particularly cottonseed meal and hulls, is causing the people in many localities to sell their cows, and thus there is danger that they will deprive themselves of milk, one of the most valuable pellagra-preventing foods. The high cost of living has further served to bring about a reduction in many families in the amount of meat, eggs, beans and peas consumed, all of which are pellagra prophylactics. In effecting economies of this nature the general public should bear in mind the importance of a properly balanced diet and refrain from excluding, if possible, such valuable disease-preventing foods. It is believed that unless this is done there will be a greater incidence of pellagra next spring.

THE UNITED STATES PUBLIC HEALTH SERVICE ASKS, DO YOU

BELIEVE in national preparedness and then fail to keep yourself physically fit?

Wash your face carefully and then use a common roller towel?

Go to the drug store to buy a tooth brush and then handle the entire stock to see if the bristles are right?

Swat the fly and then maintain a pile of garbage in the back yard?

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THIS Directory is maintained mainly for the benefit of local firms seeking the patronage of physicians and their families. Only well established and reliable concerns will be represented, and doubtless the space at our disposal will be constantly in demand. In responding to these exploitations, the reader will find it mutually advantageous to mention the MARYLAND MEDICAL JOURNAL.

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HARDLY another of all the preparations in existence offers a wider scope to imposition under the plea of "just as good" than the scientifically standardized Eucalyptol.

The most recent fraud practiced in regard to this product is an attempt to profit by the renown of the firm of Sander & Sons. In order to foist upon the unwary a crude oil, that had proved injurious upon application, the firm name of Sander & Sons is illicitly appropriated, the make-up of their goods imitated, and finally the medical reports commenting on the merits of their excellent preparation are made use of to give the desired luster to the intended deceit.

This fraud, which was exposed at an action tried before the Supreme Court of Victoria at Melbourne, and others reported before in the medical literature, show that every physician should see that his patient gets exactly what he prescribed. No "just as good" allowed.

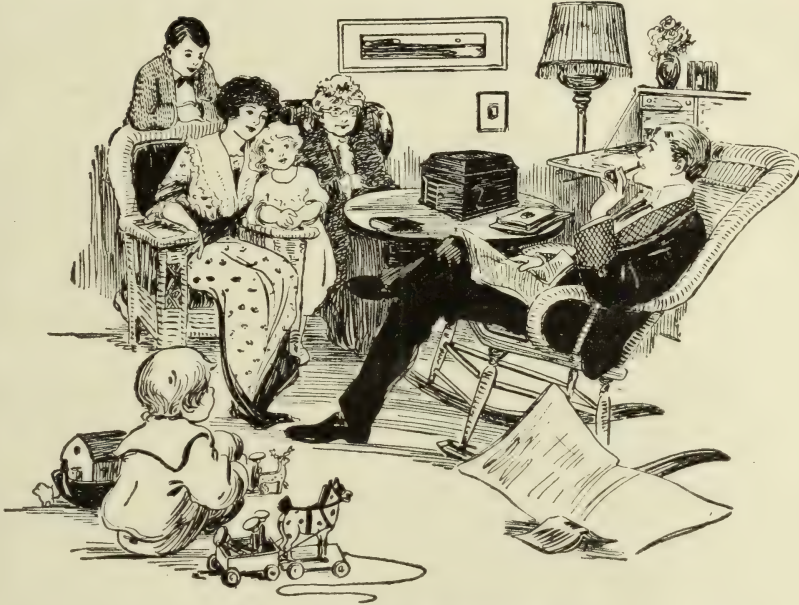
Simplified Method of Treating Rabies.

A SURVEY of the statistics of cases of human rabies shows that it is not known how much or how little of the virus when injected may result in the production of rabies in untreated cases. This fact makes it imperative that every patient should be given the full benefit of the doubt, and should receive a course which will confer the highest degree of protection. Such a course is the Lilly intensive treatment.

The Eli Lilly & Co. Rabies Virus is prepared after Harris' (Dr. D. L. Harris, professor of hygiene and preventive medicine, St. Louis University, School of Medicine) modification of the Pasteur antirabic preventive treatment. The vaccine virus is a standardized powder, the result of desiccating the pulverized frozen brains and cords of rabbits, dead from fixed virus inoculation.

The advantages claimed for this method are its safety, the high immunizing quality of the vaccine, its economy of time and expense to the patient, the availability of the initial dose for prompt administration and the standardization of dosage.

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the physician, who may administer the virus in his office or at the home of the patient. The treatment does not deter the patient from his daily routine.

The After-Care of Children's Ills.

WITH the advent of school-days, and the daily association of many children in the classroom, the contagious diseases of childhood develop and multiply. The exanthemata, as well as diphtheria, whooping-cough, etc., comprise a considerable proportion of the diseases that the family physician is called upon to treat during the late fall and winter months. The robust child, with but a mild infection, frequently recovers quickly and, perhaps, requires but little attention during the convalescent period, while the child whose general nutrition is "below par" usually emerges from the acute attack with a condition of anemia and general vital depreciation. In the large majority of cases, it is undoubtedly wise to encourage and hasten convalescence by means of a palatable and efficient hematinic and general tonic. For this purpose Pepto-Mangan (Gude) is especially valuable. All children like it and take it readily; it does not irritate the digestive organs, but, to the contrary, increases the appetite and assists in the absorption and assimilation of the child's nourishment. As it is non-astringent, it does not, as other ferruginous remedies do, cause or increase constipation. As Pepto-Mangan is prompt and efficient as a blood builder and general reconstructive, it should be preferred among children whenever medication of a general tonic nature is indicated.

Base Hospital Offered Red Cross as Memorial.

ELI LILLY & COMPANY has offered the local chapter of the American Red Cross \$25,000, in event of this country being drawn into war, to establish a base hospital of 500 beds, surgical and medical equipment and tentage.

The offer was made as a memorial to Colonel Eli Lilly, whose splendid service as a soldier and a citizen is worthy of the highest honor that can be accorded him.

The equipment of this base hospital will include every kind of supplies, from surgical instruments to bandages and clothing for patients. It is the intention of the local medical society to form a staff to operate the Colonel Lilly Memorial Hospital, which will be made up of 23 medical officers, 2 dentists, a chaplain, 50 nurses, 25 nurses' aids, 50 men for administrative duties and 10 civilians for general assignments. In event of war the unit staff will be available to move forward with the equipment of the hospital. Steps have already been taken to organize classes of men and women for training in first-aid. The entire equipment and staff will be under the command of the Red Cross.

Hastening Recovery From Grip and Pneumonia.

IT is during convalescence from grippal conditions and pneumonia that the need for an agent to augment tissue resistance becomes a most important consideration.

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THAT often intractable symptom of nervous disorder, insomnia, suggests the use of Chloretone in preference to hypnotics of the coal-tar series, for the reason that the former is not depressant to the heart and respiration and is not toxic in ordinary therapeutic doses. It produces peaceful slumber, closely resembling the natural process, the patient awakening refreshed and rejuvenated. It does not disturb the digestion, produce no objectionable after-effects and does not cause habit formation.

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It frequently happens during convalescence from a surgical attack that the patient is restless and does not secure his customary sleep. The surgeon hesitates to use narcotic and depressing agents, owing to their ill after-effects. Pasadyne (Daniel) lacks these evil qualities and hence is adapted in high degree for use in post-operative convalescence. Many surgeons now employ it routinely, having determined its therapeutic potency, and, at the same time, its innocuousness. Pasadyne (Daniel) is nothing but a concentrated tincture of passiflora incarnata. A sample bottle may be had by addressing the Laboratory of John B. Daniel, Inc., Atlanta, Ga.

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ACUTE catarrhal inflammation of the upper air passages—coryza, rhinitis, etc., popularly known as catarrh or “a cold,” which is prevalent in all parts of the country, in all seasons, and particularly at this time of the year, while never serious, it renders the victim entirely uncomfortable, and is often quite painful. Usually this condition is an independent affection, but often it is the first sign of the development of another disease; in any event, the severe manifestations call for some agent of relief.

The thin, irritating excretion makes the nostrils sore; there is inflammation of the mucous membrane of the septum with an engorgement of the lower turbinated bodies; the mucous membrane of the tear duct is swollen; pain over the frontal sinuses; slight soreness of the throat and stiffness of the neck.

A poultice of hot Antiphlogistine over the nose and extending one inch on each side, applied before retiring, relieves “the stuffed-up”

feeling in a very short time. The pain subsides and the patient, breathing in a normal manner, usually has a restful sleep, and morning finds a considerable improvement with all of the distressing symptoms abated.

Notifiable Diseases.

THE growing tendency of manufacturing chemists in presenting to the profession books and brochures containing valuable data, outside of the references made to their particular proprietary remedy, encourages the preservation of this literature on account of the real educational value of the contents.

Under the above title comes to us a brochure of many pages, issued by the Purdue Frederick Co. of 135 Christopher street, New York, manufacturers of the well-known Gray's Glycerine Tonic Comp. (Formula Dr. John P. Gray.) This booklet gives not only those diseases that should be reported to the Board of Health, but with each disease a clinical description, the cause, how transmitted, incubation period, characteristic symptoms, prognosis, durational quarantine, school regulations and disinfection.

It is really a time and labor-saver, and if you have not received a copy, we are sure that a card addressed to the above-mentioned firm will place one in your hands.

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VACCINATION AGAINST ANTHRAX.

Improvements in the Preparation of Preventive Vaccine and Serum Assist in Minimizing Loss from This Disease.

LOSSES from anthrax, or charbon, which at the present time is responsible for the death of large numbers of livestock in low, moist lands of a more or less mucky character may be minimized, according to specialists of the United States Department of Agriculture, by the proper use of protective vaccine and the proper disposal of the carcasses of infected animals. This disease affects chiefly cattle and sheep, but none of the domestic animals is exempt, and even man is sometimes a victim. Some centuries ago it is known to have caused the death of more than 60,000 persons in Southern Europe. Since that time the disease has apparently become less virulent, but it is still the cause of considerable loss to stock owners.

The preventive vaccine recommended by the Department of Agriculture is a development of the method devised about 25 years ago by Pasteur, the famous French savant. Since that time, however, scientists have succeeded in removing many of the objections to Pasteur's vaccine, and the new method is less dangerous to the animals treated and surer in its operation.

In a new publication of the United States Department of Agriculture, Farmers' Bulletin 784, detailed directions for the administration of this treatment are given. The treatment consists, in ordinary cases, of an injection under the skin on one side of the animal of 10 cubic centimeters of anti-anthrax serum, followed immediately by a similar injection, on the other side of the body, of one cubic centimeter of spore vaccine. In the case of sheep, which are peculiarly susceptible to the disease, the quantity of vaccine is reduced to one-fourth of a cubic centimeter.

In the bulletin mentioned stock owners are warned to obtain the serum and vaccine from reliable manufacturers only, and not to administer the treatment unless the disease has already appeared in the vicinity, or the pastures on which the animals are to be turned out are known to be infected. Careless handling of the vaccine may result in spreading instead of controlling the disease.

The principle underlying this treatment is the same as that which in man has resulted in the minimizing of death from smallpox, typhoid and other diseases. It consists in conferring upon men or animals an artificial immunity to the infection to which they are susceptible. Just how this immunity is conferred is a complicated scientific problem, but it is known that under certain conditions the introduction into the body of a very much weakened form of the germ that causes the disease will build up in the body a resistance that will protect it from subsequent attacks of the same disease in its normal and more virulent form. Anthrax affords an interesting example of the practical working out of this fact. A fly can easily carry a sufficient quantity of blood from an animal infected with this disease to kill a horse. Nevertheless, by repeated inoculations scientists have succeeded in developing such a high degree of immunity in a horse that the animal has been able to withstand the injection of more than a pint of the most virulent anthrax culture obtainable. This, of course, is a much higher degree of immunity than is required to insure an animal against ordinary infection.

The cause of anthrax is a minute germ which multiplies rapidly

"The nourishing of the sick is often the crux of recovery."

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- In the adjustment of the diet to overcome constipation,
- In conditions where a gain in weight is especially desired,
- In the feeding of marasmic infants—and
- As a temporary diet in diarrhea.

In other words,—proportions of Maltose and Dextrins that are adapted to the sick infant as well as the baby in health are present in Mellin's Food.

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BOSTON, MASS.

in the body, especially in the blood, and produces poisonous substances which ordinarily cause death. The symptoms of the disease resemble, in certain respects, those of tick fever and black-leg. The differences which will enable stock owners to distinguish it from them are described in detail in the bulletin already mentioned. In acute cases, however, medicinal treatment is seldom effective. For this reason the best methods of combating the disease are to vaccinate all animals likely to be exposed to the infection and by deep burying or cremating of infected carcasses, to make certain that the infection is not allowed to establish itself in pastures.

It is a well-known fact that under certain conditions and in certain forms the germs of the disease are remarkably resistant to heat, cold and drought. They will remain for a long time in a pasture and be capable of infecting any animals turned out on it. Ordinarily, the disease is taken into the body through the mouth with food. It may, however, be absorbed through a wound or even an insignificant scratch. It is in this way that human beings usually become infected, and the name "wool-sorter's disease" is derived from the fact that men engaged in sorting wool are particularly liable to contract the disease through infection of scratches or other small wounds or abrasions on their hands.

Experiments have shown that if the carcass of an infected animal is buried promptly without having been opened to permit the entrance of air, the anthrax germs die within a short time. If, on the other hand, the carcass is allowed to remain in the field or is thrown into a nearby stream, the gradual decomposition favors the transformation of the germs into minute bodies known as spores. It is in the form of these spores that the disease persists so long in infected pastures and elsewhere. For this reason great care should be taken never to skin or to cut open the body of an animal killed by anthrax. The blood that flows out when this is done is one of the most dangerous means of spreading the infection if it is taken into the soil where the conditions favor the development of the spores. In burying carcasses a useful precaution is to cover them with quicklime.

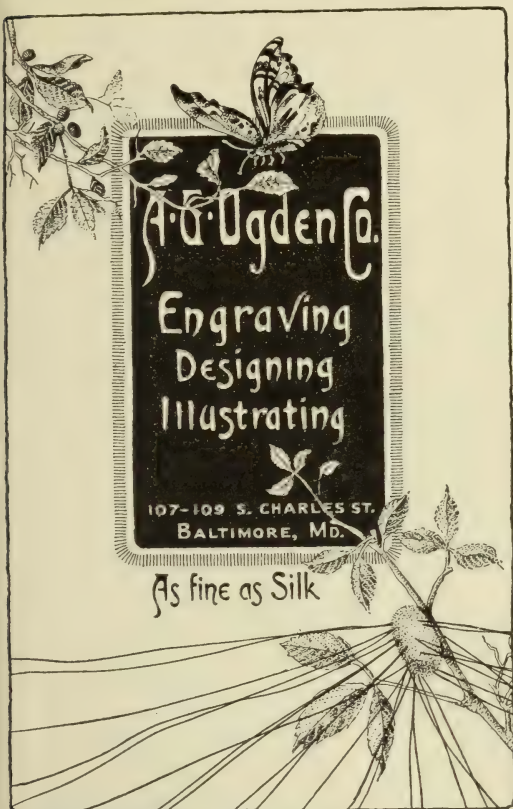
Where the bodies are burned instead of buried, great care should be taken to see that the operation is thoroughly done. Even the earth upon which the carcass has lain should be thoroughly and deeply burned over, so that the heat will penetrate to a depth sufficient to kill the germs that may have passed into the soil with fluids from the body.

GREGOR MENDEL.

GREGOR MENDEL, peasant boy, monk and abbot of Brunn, an experimental botanist whose work in his cloister garden laid the foundation of that exact knowledge of heredity which is now being extended in many directions, was born July 22, 1822.

He died in 1882. Eighteen years later began the appreciation of his labors. His doctrines, which are called Mendelism, form the scientific basis of the science of eugenics, "the science of being well born." Mendel's work made it possible for us to predict with precision whether good or bad traits will or will not appear in future offspring and to forecast with mathematical accuracy the proportion in which certain characteristics will appear and reappear.

This is important to the public health because defective persons



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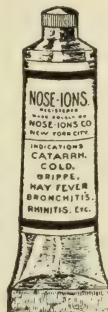
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breed defective persons and an increased knowledge of heredity means an increased power in the prevention of the creation of degenerate and insane persons on the one hand, and normal, efficient people on the other.

The population of the United States increased about 11 per cent. between 1904 and 1910, while the number of persons in insane asylums during the same period increased 25 per cent. A single family of defectives cost the State of New York in five generations over \$1,250,000.

When it is realized that not only mental but also physical traits, such as deaf-mutism, color-blindness, gout, short-sightedness, alcoholism, epilepsy, imbecility and insanity may all be transmitted to offspring, the importance of Mendel's work to the public health and public pocketbook is readily seen.

The prevention of the propagation of defectives may be controlled by the education of parents, so that they will endeavor to prevent a union of their children with children of defective families; legislation requiring a medical certificate of parties applying for marriage licenses and surgery which aims to render defectives incapable of procreating. Indiana, Wisconsin and California have laws permitting such operations.

The segregation of defectives has not proven practicable; in fact, in the case of deaf and dumb, it serves to increase rather than to decrease their number.

Mendel's experiments were made with the common pea, but the principles which he deduced from his studies are applicable not only to mankind, but to all of the lower animals, and are hence of importance to the public health worker, the botanist and the agriculturist.

AMERICAN REMEDIES FOR CHINESE AILMENTS.

CHINA will soon be the greatest market in the world for proprietary medicines, according to a bulletin issued today by the Bureau of Foreign and Domestic Commerce of the Department of Commerce, to call the attention of American manufacturers to the advantages of getting a good foothold in the market at once.

"Hygiene is practically unknown among the Chinese," the report states, "and the sickness and suffering to which the masses are subject on account of the lack of efficient native remedies or treatment is probably greater than in any other country. This is especially true of all varieties of skin diseases, against which no native salves or blood tonics seem effective."

Ten years ago the proprietary medicine trade in China was hardly worth mentioning, although foreigners had been laboring for 20 years or more to develop it, but immense strides have been made since then and ample profits have been realized. The trade, however, is still in its infancy.

Through judicious and persistent advertising the natives are gradually being educated to the necessity of paying some intelligent attention to their ailments, and are responding remarkably well. For this reason it is not difficult to introduce a good article at a reasonable price if supported by the right kind of advertising.

The bureau's report is devoted chiefly to sales methods and advertising, and the material presented on these subjects is new and important. Copies of the bulletin, which is entitled "Proprietary Medicine and Ointment Trade in China," Special Consular Re-

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THOMAS & THOMPSON CO.

Manufacturers and Dispensers of Pure Medicines (Wholesale and Retail)
 Cor. Baltimore and Light Sts., Baltimore, Md.

Ex-President Cleveland said:

No investment on earth is so safe, so sure, so certain to enrich its owners as undeveloped realty. I always advise my friends to place their savings in realty near some growing town. There is no such savings bank anywhere.

Following this suggestion, I offer a few large lots, 125' x 250', in a new and growing Northwestern development just outside of Baltimore City at less than 4 cents per square foot. Mail a postal for maps, pictures and cash discounts. Also "Easy Terms".

RICHARD W. COOK, - - - 14 E. Lexington Street

Prunoids

An ideal laxative that produces its effects by stimulating and promoting the physiologic processes of the intestines. Does not excite excessive peristalsis nor give rise to after constipation.

Prunoids promptly relieve and correct the conditions causing Chronic Constipation and meet every requirement for a safe and effective intestinal evacuant.

DOSE --- One to three tablets at bedtime as required

SENG

A trustworthy gastric tonic and secretant

Cactina Pillets

A gentle cardiac tonic that supports and sustains the heart through its capacity to improve cardiac nutrition.

Free from cumulative or other objectionable effect Cactina Pillets produce prompt and gratifying results in Tachycardia, Palpitation, Tobacco Heart, Arrhythmia, and all Functional Diseases of the Heart where the heart's action needs supporting, strengthening or regulating.

DOSE --- One to three Pillets three times a day

SULTAN DRUG COMPANY, St. Louis, Mo.

ports No. 76, may be purchased for 5 cents from the Superintendent of Documents, Washington, or from any district office of the Bureau of Foreign and Domestic Commerce. It contains 12 pages.

RECIPES FOR KILLING FLIES.

THE United States Government makes the following suggestion for the destruction of house flies: Formaldehyde and sodium salicylate are the two best fly poisons. Both are superior to arsenic. They have their advantages for household use. They are not a poison to children; they are convenient to handle, their dilutions are simple and they attract the flies.

PREPARATION OF SOLUTIONS.

A formaldehyde solution of approximately the correct strength may be made by adding 3 teaspoonfuls of the concentrated formaldehyde solution, commercially known as formalin, to a pint of water. Similarly, the proper concentration of sodium salicylate may be obtained by dissolving 3 teaspoonfuls of the pure chemical (a powder) to a pint of water.

CONTAINERS FOR SOLUTIONS.

A container which has been found convenient for automatically keeping the solution always available for flies to drink is an ordinary, thin-walled drinking glass filled or partially filled with the solution. A saucer, or small plate, in which is placed a piece of *white* blotting paper cut the size of the dish is put bottom up over the glass. The whole is then quickly inverted, a match placed under the edge of the glass, and the container is ready for use. As the solution dries out of the saucer the liquid seal at the edge of the glass is broken and more liquid flows into the lower receptacle. Thus the paper is always kept moist.

OTHER SIMPLE PREVENTIVES.

Any odor pleasing to man is offensive to the fly, and vice versa, and will drive them away.

Take five cents' worth of oil of lavender, mix it with the same quantity of water, put it in a common glass atomizer and spray it around the rooms where flies are. In the dining-room spray it lavishly, even on the table linen. The odor is very disagreeable to flies, but refreshing to most people.

Geranium, mignonette, heliotrope and white clover are offensive to flies. They especially dislike the odor of honey-suckle and hop blossoms.

According to a French scientist, flies have intense hatred for the color blue. Rooms decorated in blue will help to keep out the flies.

Mix together one tablespoonful of cream, one of ground black pepper and one of brown sugar. This mixture is poisonous to flies. Put in a saucer, darken the room except one window, and in that set the saucer.

To clear the house of flies, burn pyrethrum powder. This stupefies the flies, but they must be *swept up* and *burned*.

RECIPES FOR STABLES, BARNs AND OUT-OF-DOORS.

Borax is especially valuable around farms and out-of-doors. One pound of borax to twelve bushels of manure will be found desirable as a poison without injuring its manurial qualities or



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farm stock. Scatter the borax over the manure and sprinkle with water.

Lye, chloride of lime or copperas (sulphate of iron) dissolved in water, crude carbolic acid, or any kind of disinfectant may be used in vaults.

ANAPHYLAXIS IN GONORRHEA.

ALLERGY as a therapeutic agent in the treatment of gonorrheal complications is the subject of an article by L. D. Smith, Chicago (*Journal A. M. A.*, June 3, 1916). While working with anti-gonococcic serum in the treatment of complications of gonorrhea his attention was attracted to the fact that the individuals who were markedly affected by the anaphylaxis were the ones who responded best to the treatment. The more severe the allergic manifestations, such as temperature, urticaria, joint pains, etc., the better the results. Again no marked effect was noticeable until these manifestations appeared, and in their absence no effect on the disease, subjective or objective, was obtained. Looking back at his records, it was evident that the same conditions had obtained previously. To prove that other factors than specific antibacterial serum played an important, if not the most important, part was easy. Normal horse serum was substituted for the anti-gonococcus serum, and equally good results were obtained. To place the experiment on the same basis throughout, all the serums used were obtained from the same firm. Eleven cases altogether are reported, and the summary of them discloses the fact that normal horse serum can entirely replace the antigenococcic serum, the specific bactericidal properties of which are questionable. As a matter of fact, the recent work by Warden makes it appear doubtful whether any antigenococcic properties exist in the so-called specific serum, since in reality merely the metabolic products of the readily autolyzed gonococcus are injected into the horse in the preparation of the specific serum. To what factor the beneficial results of normal horse serum can be credited cannot be definitely stated, but that allergic phenomena play a rôle seems evident, since the best results were obtained at the time of the onset of serum sickness, and the greater the reaction, the better the results.—*Journal of the American Medical Association.*

DO YOU—

Clean your teeth and then expectorate in the washbowl?

Omit lunch to reduce weight and then overeat at dinner?

Go to the country for health and then sleep with your windows shut tight?

Wonder why you have earache and then blow your nose with your mouth shut?

Think dog-muzzling cruel and then marvel at the spread of rabies?

Carefully select your brand of liquor and then feed your children unpasteurized milk?

Repeat the Golden Rule and then sneeze in somebody's face?

Go camping for your health and then place your toilet so that it drains into your water supply?



During Pregnancy

STANOLIND Liquid Paraffin is an admirable laxative for use during pregnancy. It produces no irritation of the bowel, has not the slightest disturbing influence upon the uterus, and no effect upon the fetus.

The regular use of Stanolind Liquid Paraffin in the later months of pregnancy is an effective means of avoiding some of the serious dangers attending the parturient state because of sluggish bowel action. Stanolind Liquid Paraffin counteracts to a definite extent an unfortunate dietetic effect on the intestine in this manner; the concentrated diet of our modern civilized life contains so little indigestible material that the residue is apt to form a pasty mass which tends to adhere to the intestinal wall. Stanolind Liquid Paraffin modifies this food residue, and thus tends to render the mass less adhesive.

Stanolind Liquid Paraffin is mechanical in action, lubricating in effect. Its *suavity* is one of the reasons why increase of dose is never needful after the proper amount is once ascertained.

*A trial quantity with informative booklet
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Standard Oil Company

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LOCAL DIRECTORY

THIS Directory is maintained mainly for the benefit of local firms seeking the patronage of physicians and their families. Only well established and reliable concerns will be represented, and doubtless the space at our disposal will be constantly in demand. In responding to these exploitations, the reader will find it mutually advantageous to mention the MARYLAND MEDICAL JOURNAL.

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Danger Due to Substitution.

HARDLY another of all the preparations in existence offers a wider scope to imposition under the plea of "just as good" than the scientifically standardized Eucalyptol.

The most recent fraud practiced in regard to this product is an attempt to profit by the renown of the firm of Sander & Sons. In order to foist upon the unwary a crude oil, that had proved injurious upon application, the firm name of Sander & Sons is illicitly appropriated, the make-up of their goods imitated, and finally the medical reports commenting on the merits of their excellent preparation are made use of to give the desired luster to the intended deceit.

This fraud, which was exposed at an action tried before the Supreme Court of Victoria at Melbourne, and others reported before in the medical literature, show that every physician should see that his patient gets exactly what he prescribed. No "just as good" allowed.

Rational Treatment of Bowel Inertia.

THERE is probably no one class of drugs that has been subject to such great abuse as the laxatives. So routinely and promiscuously have remedies to increase bowel activity been prescribed that the American people have been dubbed a "nation of physic devotees."

It is indeed unfortunate that cathartics and laxatives have been thus employed with so little "rhyme or reason." The harm that has been done is only too apparent in the countless sufferers who never have a natural bowel evacuation.

Happily a good many physicians are awakening to the desirability of directing their treatment of bowel inertia and torpidity toward rational stimulation of the physiologic functions of the intestinal tract. The results obtained point so conclusively to the wisdom of this line of treatment that the older measures which depend for their effects on irritation of the intestinal mucosa or nervous mechanism of the bowel, or both, are rapidly becoming obsolete.

Among the remedies that act by correcting insufficiency of the physiologic processes of the bowels, Prunoids undoubtedly enjoy greatest popularity. The action of this true activator of intestinal functions is prompt and decided,

Chattolane Spring Water



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Pleasure is the big thing with all of us. We crave for amusement—we want to share in the music and fun that bring delight to others.

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but what is especially noteworthy, this action is without griping or any other disagreeable effects. Reactionary constipation does not follow, and unlike so many other laxative measures, Prunoids do not require continuous use in constantly increasing dosage. In fact, owing to the effect of Prunoids on the fecal mass, whereby shrinkage in size and loss of moisture are prevented, the physical conditions which promote and favor intestinal peristalsis are promptly restored. As a consequence, the functional activity of the bowels produced by Prunoids shows remarkable persistence, and a dose on two or three consecutive nights is often followed by evacuations of a most satisfying character for several days.

It is this tendency of Prunoids—not only to produce one or more movements following each dose, but to promote physiologic regularity of the bowels—that makes this remedy so much superior to “salts,” or the laxative measures commonly employed. In simple words, the use of Prunoids means the rational treatment of bowel inertia—the activation of physiologic functions.

America's Ampoule Headquarters.

“I AM glad that you carry Lilly ampoules,” said a physician to a retail druggist recently. “I always feel confident that if results are to be had from a preparation, I’ll be certain of them if the product bears a Lilly label. That’s why I prefer Lilly ampoules.”

The use of the ampoule is growing rapidly. The accuracy of dosage, directness of medication and convenience which ampoules afford appeal to the practitioner.

Eli Lilly & Company is said to manufacture the most complete line of ampoules made in the country. This well-known house already has built up a reputation on ampoules that has won for it the sobriquet “The Ampoule House.”

Lilly ampoules are supplied individually wrapped and labeled in boxes of one-half and one dozen, also in substantial cloth-covered slide cases containing an assortment of ampoules in popular demand. They are supplied through the drug trade.

A Prime Requisite of Cod Liver Oil Preparations.

NEXT to its fulfillment of therapeutic requirements, a physician demands of a cod-liver oil preparation that it be acceptable to delicate stomachs, and that its administration be possible over long periods without distress. It is by meeting these reasonable demands that Cord. Ext. Ol. Morrhuae Comp. (Hagee) has earned its rank among physicians and come into such wide use. The physician giving Cord. Ext. Ol. Morrhuae Comp. (Hagee) may feel sure that he is introducing the oil’s elements into the system, and at the least cost to the patient’s gastric apparatus.

THE Obstipation-Stasis-Autotoxemia Syndrome is complex in its aetiology as well as in its nosology. Anything that interferes with the calibre of the gut, or with the free passage of intestinal contents through the tube, results in a difficult passage of the bowel contents along the intestinal canal—Obstipation.

This may be a ptosis—or displacement of the gut at some point, a kink, abnormal sagging of suspensory structures, or dislocation of some part of the tube. This, together with abnormal dryness or lack of lubricating mucous, due to disturbance of the intestinal mucous glands, results in stagnation of the current, stoppage in many instances, a damming back of the current—Stasis.

As a result of these influences, opportunity is given for increased bacterial or chemical action, the production of an abnormal amount of toxins of unusual virulence, irritation and disturbance of the filtering or protective action of the mucous membrane and resulting absorption of increased quantities of poisonous material—Autotoxemia.

As a result of so many factors working more or less interdependently, is the establishment of the Syndrome — a complex group of many symptoms, that may simulate almost any disease or diseased condition met with in medicine.

Furthermore, these conditions, if allowed to

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The composition of Glyco-Heroine (Smith) is not being changed to meet any of the exemptions or privileges allowed under the so-called "Harrison Anti-Narcotic Law" and whereby it might be sold to the public.

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go uncorrected, may and often do, aggravate or cause serious, even fatal disease.

The ideal treatment for such conditions is lubrication. The ideal intestinal lubricant is Interol, because it comes close to Nature's own lubricant—mucous—in that it lubricates without stimulation, irritation or enervation. Being non-absorbable, it lubricates "all the way." On account of its characteristic *lubricating body*, it efficiently mixes, spreads and clings in the intestinal tract, and unless too much is administered it does not separate from the feces it lubricates and keeps soft. It does not "ooze,"—"per se."

In pruritus, even in severe forms of genital, anal, diabetic, eczematous itching, K-Y Lubricating jelly in a great majority of cases, will bring relief, or at least grateful alleviation.

To anoint the skin in these conditions, K-Y Lubricating jelly is not only effective, but convenient and economical, since it can be used without staining or soiling the bed clothes or the patient's linen. If the part is washed before each application, the best results are obtained.

An Alternative of Value.

A GENERATION of physicians has tested with complete satisfaction the alterative powers of Iodia (Battle), and the result is that today it is more popular with exacting clinicians than ever before.

Iodia (Battle) exerts a definite influence in late syphilis, when iodine is urgently needed, and in other conditions requiring agents of an alterative character. Crowd it in syphilitic deposits.

Post-Operative Mental Rest.

A HIGHLY important factor in the post-operative care of patients is to secure for them relief from nervousness and mental excitement. The recuperative power of sleep is so well appreciated by surgeons that an effort is usually made to secure it. For the purpose Pasadyne (Daniel) is one of the most potent agents, and withal is safe. Its advantage over many similar agents lies in its freedom from depressing after-effects. A sample bottle may be had by addressing the laboratory of John B. Daniel, Inc., Atlanta, Ga.

The Wider Use of the Bromides.

THE great utility of the bromides when intelligently used, is not half appreciated by the average practitioner. To be sure, medical men do employ the bromides for many conditions, but to nowhere near the extent that they could. It is a mistaken idea that bromides are serviceable only for the treatment of nervous diseases. It is true, their effects may be accomplished primarily by their action on the nervous system, but when we stop to think of the essential part played by nervous factors in the maintenance of vaso-motor equilibrium, secretory activity, nutrition and so on, the service that the bromides can be called on to render in a wide variety of abnormal conditions can readily be seen.

Obviously, too great care cannot be exercised in selecting the bromide salts to be used, particularly in respect to their purity and quality. Probably one of the main reasons why the bromides have not been more generally employed is the indifferent quality and impurities which have characterized so large a portion of the available bromide preparations.

Those who have used Peacock's bromides, however, have been able to enjoy the full advantages of this class of drugs. Made from the purest and highest grade of salts, and combined with every care and skill, Peacock's bromides have assured the highest therapeutic efficiency with gratifying freedom from all objectionable or unpleasant effect. As a consequence, the range of use of this reliable bromide preparation has been surprising, even to those most familiar with the possibilities of bromide treatment. Many affections characterized by congestion, or having their origin in nervous irritation and the resulting spasmodic conditions, have responded to Peacock's bromides when other measures have proven use-

less. So with spasmodic disorders of the intestines; many conditions that have seemed organic in character and doomed to operation, have been promptly corrected by liberal doses of Peacock's bromides.

Many other instances showing the utility of this remedy could be cited, but lack of space forbids. Suffice it to say that there is hardly any remedy at the physician's command with a broader field of usefulness. To be able to use Peacock's bromides in adequate dosage and for requisite periods of time, with complete absence of deleterious effect has undoubtedly been more or less responsible for the foregoing, but the fundamental fact is that the bromides in the form of Peacock's bromides have a much more extensive field of successful application than is realized.

"I PRESCRIBE large quantities of Tongaline for many conditions for which it is particularly indicated, but I obtain especially gratifying results from its use for what are commonly called "colds," the symptoms of which are chills, fever, sneezing, coughing, etc., and for which the system requires, first of all, prompt and thorough elimination.

I order 4 ounces Tongaline, directing that two teaspoonfuls be taken in a half glass of water, preferably hot, every two hours for three or four doses or until the patient is thoroughly under the influence of the medicine; then one teaspoonful every three hours until the attack has been aborted or the patient has recovered.

I have personally derived great benefit from Tongaline for "colds," taking it on the first appearance of any of the symptoms and in nearly every instance abort the disease and I use several bottles of Tongaline myself during the winter months in that way."

W. H. CARRIGAN
President

E. F. OHLMEYER
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THE management of the Springfield State Hospital at Sykesville has adopted a plan by which it expects to increase the farm products at the institution. Last year Dr. Joseph C. Clark, the superintendent, had a small packing-house erected at the institution, and some 4000 gallon cans of tomatoes were packed, also 3000 cans of apples and peaches. This spring the plant will be enlarged and an effort made to can vegetables in sufficient quantities to supply the hospital. The labor of preparing the fruit for packing will be done by the women patients. Some 45 will be detailed to the work. In addition to conserving the resources of the hospital the management thinks that employment for the women patients will be of great value.

A COMMITTEE composed of Dr. Henry Barton Jacobs, Dr. C. Hampson Jones, Dr. J. Hall Pleasants and H. Wirt Steele, representing the Maryland Tuberculosis Association, has sent a letter to Governor Harrington and the Maryland Preparedness and Survey Commission, in which it is urged that the Legislature at the special session provide for doubling hospital accommodations for tuberculosis patients, and also for more hospitals to be erected and equipped to meet the increasing number of cases of the disease expected as a result of the war. It is also recommended that all the State's tuberculosis institutions be correlated, co-ordinated and controlled under a State Tuberculosis Commission to be established by the General Assembly.

THERE was a joint meeting of the Baltimore City Medical Society and the Medical Society of the District of Columbia held at the Raleigh Hotel in Washington on May 16. Drs. J. M. H. Rowland, Llewellys F. Barker and Guy L. Hummer made addresses. After the meeting a smoker was given by the Washington Society in honor of the Baltimore visitors.

THE departure of three more Baltimore doctors for the firing line, a general exodus of trained nurses for Red Cross service, and the announcement of the organization of system designed to protect the practices of those who are going overseas indicates that the medical profession of Baltimore is adequately doing its share to advance the cause of the Stars and

Stripes. The names of Drs. Campbell Colston and William Jack of Johns Hopkins were announced a few days ago. Drs. Stanhope Bayne-Jones, George L. Stickney and Everett D. Plass left for an American port, from which they will shortly sail for Europe. Dr. Bayne-Jones has been commissioned a captain. Drs. Stickney and Plass are first lieutenants. All three together with two Baltimoreans already en route, as well as the medical units from other cities, will report to Colonel Bradley of the Army Medical Corps, who has established headquarters at the American Embassy in London.

A SPECIAL meeting of the Baltimore City Medical Society was held in Osler Hall May 4, at which time a symposium on "Health Preparedness" was held. The principal address was made by Dr. T. W. Sears, State Sanitary Supervisor of New York State, and was entitled "Some Methods of Conserving the National Health." The discussion was opened by Dr. William Welch of Baltimore.

ANOTHER of a series of public health lectures under the auspices of the Medical and Surgical Faculty of Maryland was held in co-operation with the Laennec Society of the Johns Hopkins Hospital, April 30, in Osler Hall, Baltimore. The topic under discussion was tuberculosis in its various phases. Dr. Horace John Hawk of Mt. McGregor, N. Y., spoke on "The Public Health Work of a Great Life Insurance Company," and "The Social Service Side of Tuberculosis Work in New York City" formed the topic of a paper read by Dr. James Alexander Miller of New York. Dr. J. Hall Pleasants acted as chairman, and Dr. Louis V. Hamman presided.

DR. WILLIAM F. TWIGG of Cumberland and Dr. Robert A. Webb, Jr., of Louisville, Ky., who were graduated from Johns Hopkins Hospital on April 28, have left for New York to join an American unit of physicians for service "somewhere in France." The two physicians will be assigned for the present to the British forces and will have the rank of lieutenant. In the event that troops from this country are sent abroad, they are to be assigned to American camps.

A "LIBERTY LOAN" mass-meeting of all Baltimore physicians was held Wednesday, May

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23, at the Medical and Chirurgical Faculty Building. The principal addresses were made by Judge John C. Rose of the U. S. District Court and Mr. Channing Rudd of Alexander Brown & Sons.

DR. LEWELLYS F. BARKER has offered the use of his home, 1035 North Calvert street, Baltimore, to the surgical dressing committee of the Maryland Branch of the American Red Cross. The committee will meet here daily until its permanent quarters in the biological laboratory of the Johns Hopkins University has been made ready.

OWING to war conditions, the wedding of Miss Cora Chambers, daughter of the late Dr. John W. Chambers and Mrs. Chambers, of 18 West Franklin street, to Dr. Alan Mason Chesney of North Calvert street, took place rather hurriedly in New York at the "Little Church Around the Corner" recently.

DR. WINFORD H. SMITH, superintendent of Johns Hopkins Hospital, has been appointed major in the United States Medical Reserve Corps, with orders to report at once for active duty at the office of Surgeon-General Gorgas at the War Department in Washington. Although he will spend most of his time in Washington, Dr. Smith expects to be able to go back and forth between Baltimore and Washington in order to keep in touch with the hospital. Dr. Ralph B. Seem, his chief assistant, will have charge of the hospital.

DR. JAMES A. NYDEGGER has been reassigned to the Port of Baltimore for four more years.

DR. HUGH H. YOUNG, director of the Brady Urological Institute, Johns Hopkins Hospital, will soon leave for England, accompanied by Dr. Louis C. Lehr of Georgetown University, Dr. M. L. Boyd of Emory University, Atlanta, and Dr. H. L. Cecil of Brady Institute. Dr. Young, who is one of the most widely-known of Baltimore surgeons, is chairman of the Maryland Committee on Medical Preparedness.

DR. EDWARD V. MILHOLLAND of Baltimore has been appointed chief medical examiner of the Baltimore & Ohio Railroad to succeed Dr.

Joseph F. Tearney, who has retired on account of ill-health.

DR. JOHN W. SANDERSON of Baltimore is at the Maryland General Hospital suffering from a fractured skull as a result of a fall down the stairs at his home when he arose to answer a sick call.

THE Medical and Chirurgical Faculty of Maryland has created a fund of \$10,000, to be known as the Osler Testimonial Fund, the income of which is to be used for the purchase of books for the faculty library and for the upkeep of the hall which bears Sir William Osler's name.

At the 119th meeting of the Medical and Chirurgical Faculty of Maryland the following officers were elected: Dr. William S. Halsted, Baltimore, president; Drs. James E. Deets, Clarksburg; James F. Dick, Salisbury, and Julius Friedenwald, Baltimore, vice-presidents; Dr. John Staige Davis, Baltimore, secretary, and Dr. William S. Gardner, Baltimore, treasurer. The medical examiners appointed were Drs. Charles C. W. Judd, Baltimore, and Albert L. Wilkinson, Raspsburg.

DEATHS.

REZIN WARFIELD HALL, M.D., Moundsville, W. Va.; University of Maryland, Baltimore, 1874; aged 72; a Fellow of the American Medical Association; a veteran of the Civil War; died at his home April 22.

JOHN WILLIAM ANDERSON, M.D., Richmond, Va.; University of Maryland, Baltimore, 1854; aged 82; a practitioner of Alabama until the Civil War, and during the war engrossing clerk in the Confederate Senate; later deputy clerk of the Hustings Board of Richmond and examiner of real estate titles; who was admitted to the bar in 1884, died at his home January 9, from uremia.

ALEXANDER THOMAS, M.D., Sumas, Wash.; College of Physicians and Surgeons, Baltimore, 1909; aged 44; a member of the Washington State Medical Association, and since 1912 a member of the staff of the Dalton Hospital, Sumas; died in that institution April 19, after an operation for acute appendicitis.

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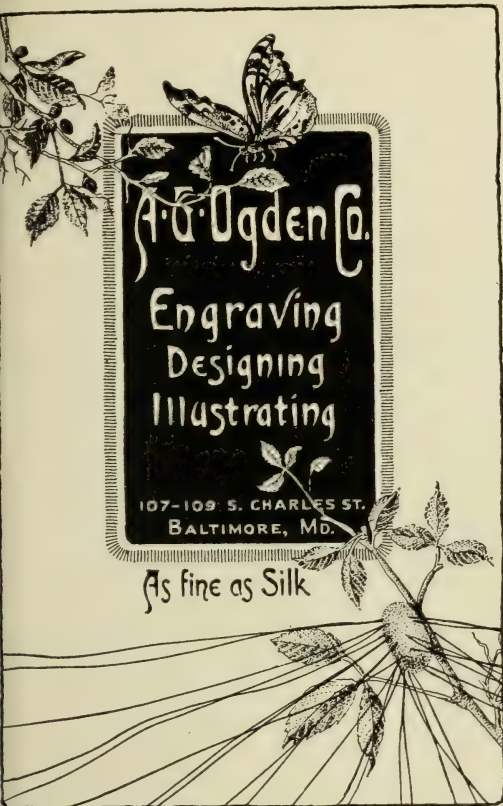
HEALTH NEWS ISSUED BY THE UNITED STATES
PUBLIC HEALTH SERVICE.

COMPLETE refutation of the claim that the Government does not concern itself with the loss from preventable disease is contained in the annual report of the Surgeon-General of the Public Health Service submitted to Congress today. Activities ranging from the prevention and cure of blindness, scientific studies of pellagra, the protection of the health of industrial workers, the prevention of the introduction of typhus fever, investigations of child labor and health insurance, the eradication of communicable diseases and the control of the pollution of navigable streams, are recorded and demonstrate conclusively that the National Government is vitally concerned in the health of its citizens.

The most striking achievement of the year relates to pellagra, an affliction which in certain States destroys more lives than tuberculosis. Pellagra is no longer a disease of mystery, as the Public Health Service has clearly shown that it is caused by a restricted diet, and that it may be prevented and cured by means of a properly-balanced ration. The practical application of this knowledge has already resulted in a material reduction in the prevalence of this affliction in all parts of the country, and it is confidently believed that in another year even more marked improvement will be observed.

In the eradication of trachoma, a contagious disease of the eyes, frequently terminating in blindness, such marked success has been obtained that the methods followed, the converting of private residences into small hospitals and the holding of free open-air clinics, have been adopted by the Egyptian Government. During the year 1700 persons were operated upon for the relief of partial or complete blindness, nearly 2000 received hospital treatment, while more than 19,000 were treated at hospital dispensaries and clinics. When it is realized that a large proportion of these people were doomed to years of suffering, terminating in at least partial blindness, and that they have been restored to lives of usefulness, in some instances even being taken from county poorhouses, where they had been public charges for the greater portion of their days, the importance of this most beneficent work can be imagined. The total cost of this undertaking, including the remodeling of buildings and every expense in connection with the feeding and care of patients, was less than \$39,000 for the year.

Increased interest was shown by the Government in the health of rural dwellers, and Congress has recognized, by making an appropriation for studies in rural sanitation, that the welfare of the country resident is not to be neglected. During the past three years 80,270 homes in 15 different counties of 13 States were visited and complete sanitary surveys made of the premises. In every instance definite recommendations were given to remedy such evils as existed, as, for example, the pollution of wells, the presence of disease-bearing insects and the improper disposal of excreta. In addition, 22,234 homes were revisited, mostly at the request of the owners, in order that the Government agents could inspect the improvements instituted. Wherever this method of bringing the lessons of sanitation directly to the rural dweller has been followed, a marked reduction has been observed in the preva-



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lence of typhoid fever, hookworm, malaria and other preventable diseases.

Attention has also been given to the health of the children of the nation, more especially to rural school children. Over 32,000 children attending the public schools were examined during the year in order to determine their mental status and the causes and percentage of mental retardation and deficiency. In addition, 7,000 physical examinations were completed for the determination of physical defects.

The health of industrial workers has been safeguarded to a greater extent than at any time in the past. Studies have been made of the occupational hazards of steel workers in many of the leading industrial establishments of the country, and insanitary and harmful conditions corrected. In the zinc mines of Missouri methods have been adopted which should go far toward eradicating tuberculosis from that district. Investigations of child labor and of health insurance have also been made.

What is regarded as the largest and most important single undertaking of this nature yet inaugurated—the investigation of the pollution of the Ohio River—is still in progress. Surveys of the Atlantic Coast and New England watersheds have, however, been completed, and the extent and effects of their pollution is now known. This knowledge demonstrates that Federal legislation to prevent the contamination of water sources is a necessity.

Better provision for the health of travelers has been obtained by safeguarding the water supplies of common carriers, and through the promulgation of regulations governing the transportation of persons suffering from communicable diseases.

Energetic efforts have been made to prevent the introduction of all communicable diseases and to control those already with us. Typhus fever has been combated at all points on the Mexican border, and disinfection plants established where the clothing and persons of all incoming aliens have been disinfected. At one station alone—El Paso, Texas—26,000 persons were inspected and treated in such a manner as to insure their freedom from this highly fatal infection.

Plague eradication measures at New Orleans have been continued. Over 371,000 rodents, the carriers of plague infection, were either trapped or killed, and more than 100,000 were carefully examined. No human case of the disease has occurred during the year. Measures for the control of typhoid fever, Rocky Mountain spotted fever, malaria and other infections have been continued as heretofore, and the results obtained have been most gratifying.

In only a single field—the medical inspection of immigrants—has the work of the Public Health Service shown any diminution during the year, but this has been compensated for by the more thorough examination accorded. Four hundred eighty-one thousand and two hundred and seventy aliens were examined for the purpose of determining physical and mental defects. Of these, 16,327 were certified for deportation, proportionately a greater number than has ever been recorded. The percentage of mental defectives certified is also steadily increasing.

At the marine hospitals and relief stations of the service approximately 69,000 beneficiaries received medical or surgical treatment—a number greater by 10,000 than for any previous year.

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Free from cumulative or other objectionable effect Cactina Pillets produce prompt and gratifying results in **Tachycardia, Palpitation, Tobacco Heart, Arrhythmia, and all Functional Diseases of the Heart** where the heart's action needs supporting, strengthening or regulating.

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ADULTERATED ARNICA.

Department of Agriculture Issues Warning Regarding Importation of Arnica Substitute.

The officials in charge of the enforcement of the Food and Drug Act report that the examination of recent importations labeled as "Arnica" flowers has revealed that in some instances another product having the botanical name of "*Inula britannica* L." has been substituted for the authentic arnica. This substitute is not recognized as official in the United States Pharmacopeia, and, so far as the officials know, is not recognized as official in the Pharmacopeia of any other country. The Department of Agriculture will recommend the exclusion from the United States of shipments offered for importation as "arnica" flowers which consist wholly or in part of the adulterant "*Inula britannica* L.," since "*Arnica montana*," which is the botanical name of the authentic arnica, contains active principles which are not found in the substitute.

The striking differences between the authentic product and the adulterant are, according to the officials in charge of the enforcement of the Food and Drug Act, that in the adulterant the length of the young achene (undeveloped fruit) is very much shorter (about 1 mm. long), while it is from 5 to 7 mm. in the genuine product. The ligulate (ray) flowers are also considerably smaller in length and width than those of the true arnica flowers. The veins number four in the ligulate (ray) flowers of *Inula*, while ten have been observed in those of arnica and 7 to 12 are reported in the literature. The receptacle (the enlarged end of the flowering stalk) is smooth in the *Inula* flowers, but hairy in true arnica flowers. There is an abundance of hair-like structures of certain flower parts developed in both species which are the cause of a somewhat similar appearance of the products.

FIND ADULTERATED DRUGS.*Department of Agriculture Invites Criticism of Proposed Rulings.*

The officials in charge of the enforcement of the Federal Food and Drug Act have found certain impurities in unicorn root, dandelion root and cramp bark. In order that the trade may know what the United States Department of Agriculture regards as adulterants of these products, it is proposed that service and regulatory announcements be issued outlining the opinion of the department. Before issuing the service and regulatory announcements the department desires to obtain the views of the trade or other interested parties as to the fairness of the rulings. Communications should be addressed promptly to the Bureau of Chemistry, Department of Agriculture, Washington, D. C. All criticisms will receive careful consideration. The proposed announcements follow:

Unicorn Root.—Samples of true unicorn root, *Aletris farinosa*, obtainable in interstate trade, have been examined. As a result of this study it was found that excessive amounts of total ash and acid insoluble ash (sand) were present. In a few instances

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the limit of 16 per cent. given in the new National Formulary was exceeded. The bureau is of the opinion that material properly collected should contain not more than 10 per cent. of total ash, and the amount of insoluble ash should be considerably below 5 per cent. Of special interest is the fact that one sample which contained about 3 per cent. of true unicorn root consisted otherwise entirely of false unicorn root, *Chamaelirium luteum*. The department will regard as adulterated or misbranded under the Food and Drug Act any unicorn root containing total ash in excess of 16 per cent., or which contains material other than true unicorn root, *Alétris farinose*.

Dandelion Root.—Examination of samples from a recent importation of dandelion root disclosed the presence of about 40 per cent. of roots the interior of which were badly discolored and did not show a porous, pale yellow wood, as required by the United States Pharmacopeia, IX, 1916. The appearance suggested that the material had been improperly dried. This fact was confirmed by microscopic examinations, showing swollen brownish-yellow masses, indicating that the inulin masses had been partially hydrolyzed and caramelized. The department will recommend the exclusion from the United States of any importation of dandelion root which, upon examination, is found to contain more than 10 per cent. of discolored or improperly-dried roots.

Use of the Term "Cramp Bark."—The bureau considers that the term "cramp bark" applies only to *Viburnum opulus*, now official in the National Formulary, and consequently should not be used for barks from other sources or their preparations.

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Babies have a right to an officially-registered name?

The board bill for last year's babies was almost as great as the undertaker's bill for last year's babies?

Being healthy is the first duty of a citizen?

Disease is the greatest foe to human progress?

It's the unused body that deteriorates quickest?

Fly destruction is its own reward?

A walk in the open is worth two in the house?

Personal hygiene is the first requisite for community health?

A small mosquito is a dangerous thing?

Most of the diseases from which man suffers are peculiar to man?

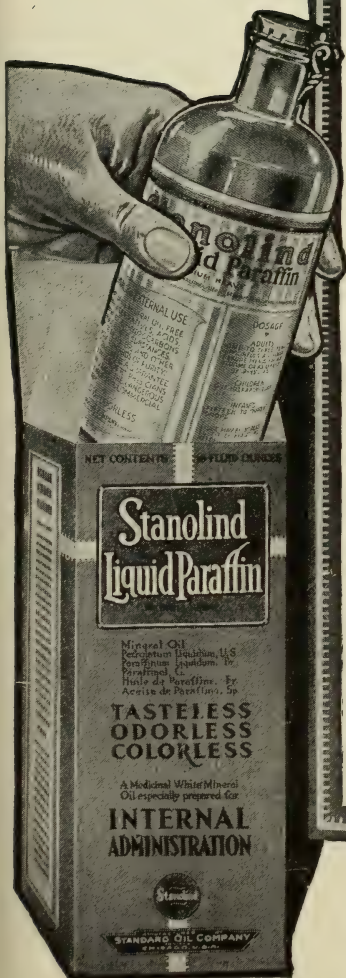
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THIS Directory is maintained mainly for the benefit of local firms seeking the patronage of physicians and their families. Only well established and reliable concerns will be represented, and doubtless the space at our disposal will be constantly in demand. In responding to these exploitations, the reader will find it mutually advantageous to mention the MARYLAND MEDICAL JOURNAL.

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This fraud, which was exposed at an action tried before the Supreme Court of Victoria at Melbourne, and others reported before in the medical literature, show that every physician should see that his patient gets exactly what he prescribed. No "just as good" allowed.

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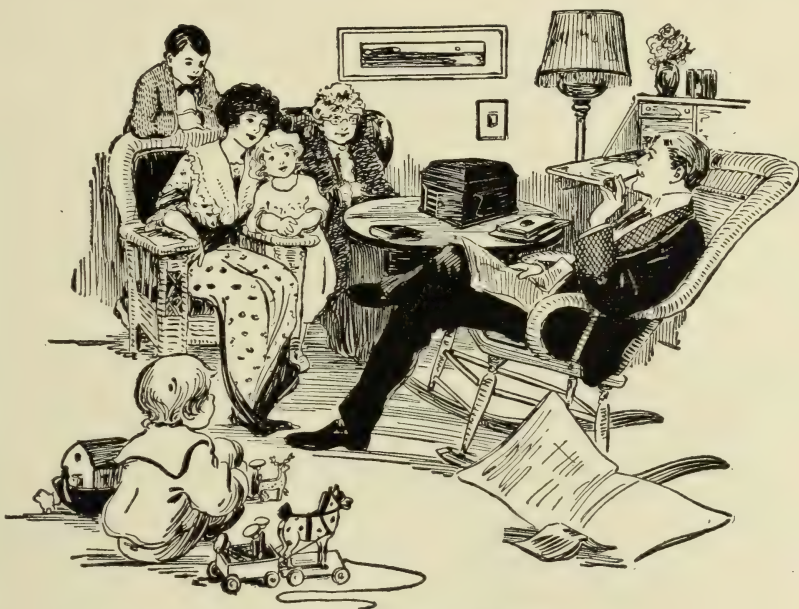
ON solution in water Germicidal Soap (McClintock) liberates a small quantity of free alkali. This prevents the coagulation of albumin and permits the mercuric iodide contained in the soap to thoroughly penetrate bacterial and tissue cells.

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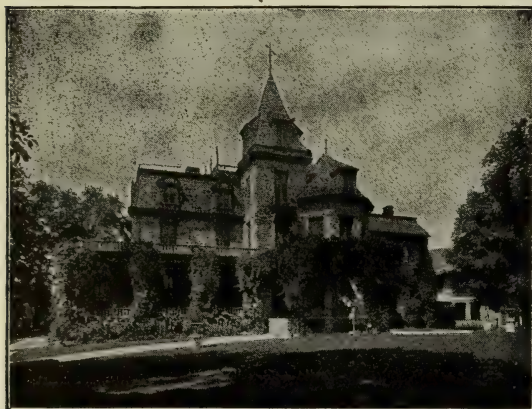
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EVEN the most robust and generally healthy children show the deleterious results of the modern system of educational "forcing" that prevails in most of our larger cities. The child that starts the school year in excellent physical condition, after the freedom and fresh air of the summer vacation, in many instances becomes nervous, fidgety, and more or less anemic, as the term progresses, as the combined result of mental strain and physical confinement in overheated, poorly ventilated school-rooms. How much more likely is such a result

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JULY, 1917

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PREVALENCE OF SYPHILIS, AS INDICATED BY THE
ROUTINE USE OF THE WASSERMANN REACTION.*

By *Wm. M. Bryan*,
Passed Assistant Surgeon,

and

Jas. F. Hooker,
Acting Assistant Surgeon, United States Public Health Service.

THE Wassermann reaction is steadily coming into more common use, and its value as a routine procedure is being more fully appreciated. A number of reports of such routine examination have been made, notably one by Dr. Albert A. Homer (*Boston Medical and Surgical Journal*, February 10, 1916) on 500 cases at the Massachusetts General Hospital, in which he found that 17.4 per cent. of the patients tested gave a positive reaction.

For the purpose of comparing such findings and also to determine the incidence of syphilis in a certain industry, it was decided to obtain a similar series from seamen admitted to the Boston Marine Hospital and to compare this with the records of previous years, when the Wassermann had been used only occasionally, and with other years when it had not been used at all. The higher syphilitic morbidity in our series than is usual in general hospitals is probably fully accounted for by the fact that only adult males are treated at marine hospitals.

Since February, 1916, blood has been drawn from everyone admitted and the serum obtained by centrifuging sent to the Hygienic Laboratory at Washington, where the test was made. Up to October, 1916, 312 cases were thus tested, and 77, or 24.7 per cent., were positive. Readmissions and faulty specimens have been excluded from this series, and doubtful reactions have been considered negative.

Of the 77 positive cases, 19 were obviously syphilitic, having either marked secondaries or other symptoms on which a definite diagnosis could have been made without the use of a Wassermann. If these 19 cases be excluded, the percentage will be reduced to 18.6 in the apparently non-syphilitic. On the other hand, it should be noted that 11 cases obviously syphilitic gave a negative reaction because of recent treatment, and had these cases been included with the 77 positive cases the total incidence would be raised to 28.2 per cent.

Beginning in 1911, the Wassermann reaction was used at the Boston Marine Hospital as an aid to diagnosis in doubtful cases, and the records show that from that date to 1916, 2863 cases were admitted and 468 Wassermans taken, of which 191 were positive, 260 negative and 17 doubtful, and that in these years 9.1 per cent. of all cases admitted were diagnosed as syphilitic.

Reports for the five years, 1907-1911, show that 4.3 per cent. of all cases treated in hospitals of the United States Public Health Service were diagnosed as syphilis. During this period the Wassermann reaction was used seldom, if ever, so this is probably a fair average of the easily recognizable cases among patients at Marine Hospitals.

The value of the serum test in the diagnosis of syphilis is now universally admitted, and the fact that the reaction may be positive

*Reprint from the Public Health Reports, Vol. 31, No. 47, Nov. 24, 1916, pp. 3230-3231.

"Treatment based on the internal secretions is, in some instances, positively startling in its results."

—Editorial N. Y. Med. Jour., Feb. 26th, 1916.

"The theory of an internal secretion of the kidney has been established as definitely for that organ, as for any of the vascular glands of the economy. The fine results obtained by renal therapy are the best proofs in favor of this theory."—Jacques Delor, *Traitement Opothérapique des Néphrites*, 1911.

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in the absence of this disease or negative in its presence does not detract from its practical value. It is also well recognized that more negative reactions occur in the presence of syphilis than positive reactions in its absence, and this is true especially in the obscure so-called parasyphilitic cases, as has been demonstrated not only by the other reactions, such as the gold chloride test, but also by the post-mortem findings.

From the above data it would seem fair to conclude:

1. That the prevalence of syphilis is much greater than is shown by ordinary hospital and medical records, and that by the routine use of the Wassermann reaction a large percentage of cases which certainly could not be diagnosed without it will be recognized and properly treated.

2. That for the protection of the public health, to say nothing of the relief of much individual suffering, State and city laboratories where the Wassermann test can be obtained without cost should be universally established, and physicians and the public at large should be educated to its use in the same way that they have been educated to demand examination of sputum for tuberculosis.

URGE CHEMISTS TO ANALYZE EACH CITY'S GARBAGE.

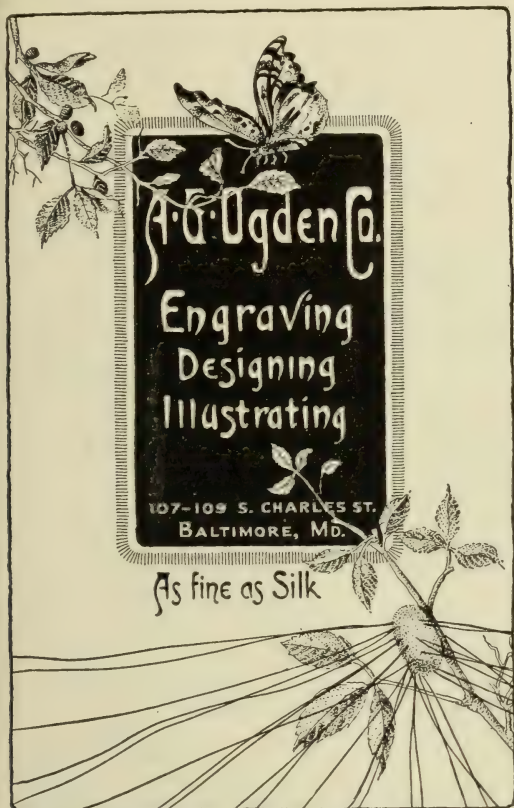
The Department Believes That the Waste of Human Food and Stock Feed Thus Revealed Will Lead to Immediate Reforms.

"Have your city food chemist analyze your city garbage from week to week and publish prominently what he finds as an index of food saving or waste in your community" is the suggestion of the U. S. Department of Agriculture is making to municipal authorities throughout the country. Where there is no official chemist, the Department points out, local chemists capable of determining percentages of fats, protein, starch and organic matter wasted in garbage can render great service to the nation by volunteering to make these analyses in their localities.

Vast amounts of bread, meat and edible fats are wasted in garbage and tons of valuable feedstuffs for animals are lost to the food supply of the nation by usual garbage reduction or disposal methods. One of the first results from the careful analysis of city garbage should be the passage of more rigid enforcement of garbage-collection ordinances, requiring that no glass, tin, wood, burnt matches, paper, string, or inorganic trash be mixed with the vegetable material, meat scraps or bones which can be used for feed.

This dual collection of garbage and trash is being rigidly enforced by Germany in all cities of 40,000 people. Garbage so collected from a population of 17,000,000 people in Germany, although the German garbage pail always has been far leaner than the American one, and is especially light at this period, furnished briquettes rich in protein which when fed to dairy cattle produced 1,500,000 to 2,000,000 quarts of milk daily.

In most American cities, however, garbage is sent to reduction plants, where all the fat and oil it contains is recovered for use in making soap or greases. The residue after the oil is extracted is used as fertilizer or dumped into the ocean. This practice has been highly profitable, because the American garbage pail is very



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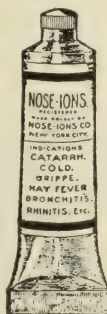
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rich in fat, American garbage averaging 3 per cent. of fat, while German garbage rarely shows even 1 per cent. of fat, as the German people never have been wasteful of animal or other fats. Another reason for the use of the reduction method is that in many cities ordinances prevent the use of garbage for feeding animals, particularly dairy cows, although there is no valid hygienic objection to the use of dried and properly sterilized garbage as food for cattle or hogs.

The Department specialists believe that as the thrift idea gains ground less and less fat will be thrown into the garbage pail and are hopeful that the time is not far distant when the amount of fat will make reduction for the recovery of oils hardly worth while. This will mean that a lot of excellent and valuable food-stuff now being wasted as food will never get into the garbage pail. Even when all fat is eliminated, however, and waste of bread and cereals and meat has been reduced to a minimum, the garbage pail nevertheless will contain in the form of parings, plate scraps and trimmings a vast amount of material which should be conserved and used as feed for hogs, cattle or poultry. First, however, the people must face the facts and know the truth of their waste, and in bringing this waste home local chemists can render effective service.

TRIPLE MERGER OF MEDICAL COLLEGES IN PHILADELPHIA.

A NOTEWORTHY merger of medical colleges has just taken place in Philadelphia, by which the Medico-Chirurgical College, the Jefferson Medical College and the University of Pennsylvania, School of Medicine, have united to form one larger teaching institution. The Medico-Chirurgical College is to be the graduate school of medicine of the University of Pennsylvania, its corporate title to be "The Medico-Chirurgical College and Hospital, Graduate School in Medicine of the University of Pennsylvania." The Jefferson Medical College and the University of Pennsylvania, School of Medicine, will continue undergraduate medical teaching under a joint title, although retaining their individual identities so far as their properties and endowments are concerned. The union of these three institutions, therefore, will provide not only for the better instruction of undergraduates, but also for the development on a high plane of instruction for graduates. The plan under which the Jefferson Medical College and the University of Pennsylvania, School of Medicine, have been merged is given in *The Journal of the American Medical Association* for June 10, 1916. Since the University of Pennsylvania has recently found it necessary to limit the enrollment of medical students, the union with the Jefferson Medical College is opportune, and will provide the additional teachers, laboratories and clinical material by which larger numbers of medical students can be cared for. This merger provides a single management, a single curriculum and single standards for the admission, promotion and graduation of students. It also permits a single control, and, therefore, a more systematic and efficient use of the abundance of clinical material formerly controlled by three separate institutions. This merger marks a decisive step forward in medical education in

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this country, and will doubtless point the way to future mergers in other cities.—*Journal of the American Medical Association.*

BETTER SANITATION NEEDED IN RURAL SCHOOLS.

IN the interests of efficiency and health there is increasing necessity for the application of scientific medical and sanitary knowledge to the administration of the public schools, in the opinion of the Public Health Service.

In general, the faults observed in rural schools, the annual report of the Service declares, are due to a lack of skilled advice, especially in regard to the location, construction and equipment of school buildings and disregard of sanitary principles governing water supplies, the disposal of sewage, ventilation, temperature, illumination, and the arrangement of school desks and blackboards. During the past fiscal year surveys have been made in rural districts of several States and many thousand school children have been examined. These examinations have included thorough testing of the eyes by competent oculists, tests of mental capacity, and the effect of sanitary environment on school progress, as well as inspections for the customary physical defects.

The conclusion is reached that there is great need for improvement in rural schools and that communities themselves will benefit if conditions are bettered, the schools serving as object lessons for surrounding sections. Conditions in country districts have been found below those in the cities, and it is apparent that organized health work has largely been confined to the latter. Considered from a sanitary standpoint alone, the Public Health Service is in favor of the consolidation of rural schools, since it must eventually result in the providing of better buildings and the organization of systems of efficient sanitary inspections.

HEALTH NEWS ISSUED BY THE UNITED STATES PUBLIC HEALTH SERVICE.

OUT of 330,179 school children examined in the city of New York in 1914, 194,207, or 58.8 per cent., suffered from defective teeth. This exceeded the sum total of all the other defects noted by nearly 80,000. Defective teeth impair general health and impede school progress. Disorders of the digestive tract, tuberculosis and various other diseases frequently are preceded by diseased conditions in the mouth. There is a direct relationship between dental development and mental development, and it is absolutely essential to good work in schools that children's teeth be maintained in a healthy condition. The Public Health Service recommends that a good tooth brush be included in the list of Christmas presents for every American child, and that its use be made a part of the daily training. If this recommendation is carried out, the United States will have more healthy children this year than last, and their chances of growing up into useful, healthy men and women will be increased.

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TOO BUSY OR APATHETIC?

IT is discouraging to observe how little the facilities for clinical instruction available in this city are made use of by the local physicians. In many departments of medicine these facilities are the equal of any in the world; in some they are superior. For example, in connection with the activities of Baby Week, a large number of special pediatric clinics were arranged for, in which all the prominent pediatric authorities participated. The complete list published in the *Weekly Bulletin of the Department of Health, City of New York*, was placed in the hands of all the physicians in this city the week preceding. Result: A few clinics had a handful of visitors, some had one or two, many had none at all. In view of the fact that the clinics were given in hospitals in various parts of the city and admission was by card, is not the conclusion justified that our local physicians are either too busy or too apathetic?—*Weekly Bulletin of the Department of Health, City of New York*.

DO YOU KNOW THAT

THE Constitution of the United States doesn't mention health?
Procrastination in sanitary reform is the thief of health?

A book on "Exercise and Health" may be had free for the asking from the United States Public Health Service?

Not everybody can achieve greatness, but everybody can be clean?

If you sow a hygienic habit you reap health—reap health and you attain longevity?

Railway cars would be sanitary if it weren't for the people in them?

America's typhoid fever bill is more than \$270,000,000 a year?

The full dinner pail is the enemy of tuberculosis?

Peace hath her health problems no less than war?

Constant vigilance is the price of freedom from flies?

The physical vigor of its citizens is the nation's greatest asset?

Idleness is the thief of health?

Infected towels spread eye diseases?

Half the blindness in the world could have been prevented by prompt and proper care?

It is dangerous to put anything into the mouth except food and drink?

Sanitary instruction is even more important than sanitary legislation?

The United States Public Health Service issues free bulletins on tuberculosis?

The continuous liberal use of alcoholic beverages lowers efficiency and menaces longevity?

Moderate exercise in the open air prolongs life?

"Mouth breathing" makes children stupid?

Fish cannot live in foul water nor man in foul air?

Smallpox is wholly preventable?

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THIS Directory is maintained mainly for the benefit of local firms seeking the patronage of physicians and their families. Only well established and reliable concerns will be represented, and doubtless the space at our disposal will be constantly in demand. In responding to these exploitations, the reader will find it mutually advantageous to mention the MARYLAND MEDICAL JOURNAL.

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Danger Due to Substitution.

HARDLY another of all the preparations in existence offers a wider scope to imposition under the plea of "just as good" than the scientifically standardized Eucalyptol.

The most recent fraud practiced in regard to this product is an attempt to profit by the renown of the firm of Sander & Sons. In order to foist upon the unwary a crude oil, that had proved injurious upon application, the firm name of Sander & Sons is illicitly appropriated, the make-up of their goods imitated, and finally the medical reports commenting on the merits of their excellent preparation are made use of to give the desired luster to the intended deceit.

This fraud, which was exposed at an action tried before the Supreme Court of Victoria at Melbourne, and others reported before in the medical literature, show that every physician should see that his patient gets exactly what he prescribed. No "just as good" allowed.

The Neglected Therapy of Convalescence.

THE physician of education and experience, who keeps in touch with the progress of medicine generally, is well informed as to the treatment of most of the "thousand and one" ills that he is called upon to combat. The diagnosis and treatment of acute conditions, as well as the successful management of the more chronic affections, are subjects which he is constantly investigating and studying. It so happens, however, that after the dangerous shoals of medical navigation have been successfully negotiated and when the crisis or danger point has been passed, the physician is all too liable to relax his vigilance and to allow the patient to convalesce without sufficient attention to the therapeutic details of this important period. While the feeding of the convalescent is of great importance, the medico-tonic treatment is equally essential, in order to improve the appetite, tone the digestive, assimilative and eliminative functions generally and to hasten the time when the patient shall be once more "upon his feet." Among all of the general reconstituent and supportive measures in the therapy of convalescence, none is more essential than the reconstruction of a blood stream of vital integrity and sufficiency. Pepto-Mangan (Gude) is distinctly valuable in this special field, as it fur-

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nishes to the more or less devitalized blood the necessary materials (iron and manganese) in such form as to assure their prompt absorption and appropriation. One especial advantage of administering these hematinics in this form is that digestive disturbance is avoided and constipation is not induced.

Hypodermic Medication.

HYPODERMIC medication usually means emergency medication. When the occasion for it arrives the physician, if he is to employ a tablet solution, is fortunate if he has tablets upon which he can depend. The failure of the tablet is his failure—he cannot shift the burden of responsibility. And tablets for hypodermic use, to be reliable, must possess a number of important qualifications. They must be true to label; they must be active; they must contain a definite amount of medicament; they must be soluble.

These thoughts were vividly impressed upon the mind of the writer upon the occasion of a recent visit to the hypodermic-tablet department of Parke, Davis & Co. Here we see hypodermic-tablet manufacture reduced to a science. Here we find tablet-making facilities that exist probably nowhere else in the world.

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THE efficacy of antityphoid vaccination as a prophylactic measure in controlling typhoid fever has been clearly demonstrated from army and hospital statistics. We have reached that stage of preventive medicine where it is possible to recommend the use of the vaccine with confidence and authority as a matter of personal hygiene, which will practically insure protection against typhoid fever.

Elsewhere in this issue the Eli Lilly & Co. urges physicians to protect their patients by vaccination against typhoid and paratyphoid fevers. Summer and autumn are the seasons when protective measures are most important, since it is then that persons are more likely to have accidental or unusual exposure, and the use of Lilly Typhoid Vaccine or Typhoid Mixed Vaccine is recommended as the best method of preventing the disease and reducing the danger of epidemics. Further particulars concerning Lilly biologicals may be had by addressing the principal office of the company at Indianapolis, and a handy vest pocket manual on biological therapy will be sent to our readers on request.

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THE QUARANTINE CONTROL OF CONTACTS.*

By Paul B. Brooks, M.D., Sanitary Supervisor State Department of Health, New York.

ONE of the "landmarks" in a section of the Adirondack forest in which it has been my fortune to spend several summer vacations is the "fire warden." When a forest fire is discovered, he tells me, every able-bodied man in the vicinity may be pressed into service, and, with axe, pick and shovel, an effort is made to circumscribe the burning area and prevent the spread of the flames. Not less important, although possibly somewhat less thrilling and more irksome, is the duty of those assigned to watch for flying sparks and fire-brands and prevent their starting new fires. When the emergency is over an effort is made to discover its origin and to prevent the same thing happening in the same way again.

The health officer has much in common with the guardian of the forest. If he is faithful to his duty, he stands guard day after day over the life, health and happiness of the people of his community, ever ready, with tact, nerve and judgment, to note the first signs of impending disaster, ready to apply to its prevention or control the knowledge that a rapidly-developing science has placed at his disposal.

Looking in retrospect over my own experience as a health officer, and more recently from observing the work of a considerable number of other health officers, I am led to the conclusion that we may learn something from the fire warden; that we have been somewhat lacking in foresight and sense of proportion. We have devoted ourselves vigorously to subduing the first blaze, but have too often neglected to stamp out the sparks and fire-brands, and to guard against the occurrence of new fires from the same source. In other words, we have more or less faithfully devoted ourselves to tacking up quarantine signs, laying down rules and regulations, and have even brought the village constable to stand on guard to prevent the victims of communicable disease from going beyond bounds; we have burned our sulphur and generated our formaldehyde, leaving behind us a comforting sense of security and an abundance of disagreeable odors. But we have given far too little attention to seeking out and bringing under observation and control those susceptible persons exposed to and likely to develop and spread disease, and to locating and eliminating the source of the first outbreaks.

Underlying all well-directed efforts to determine sources of infection and to discover contacts there must exist a reasonable knowledge of the nature of the disease, the habits and peculiarities of the causative organism, the minimum and maximum period of incubation, etc. Smallpox should not be permitted to pass for chicken-pox, or scarlet fever for German measles, although these accidents sometimes happen in fairly "well-regulated families." It would be useless to look for yellow fever "contacts" when there were no mosquitoes. The deliberation which might suffice in mumps, with an incubation period of 21 days, or even in smallpox, would be out of place in search for scarlet fever contacts.

It is also important that the health officer be conversant both with his legal limitations and with the requirements of the Public

*Read at the Annual Conference of New York State Sanitary Officers, Saratoga Springs, June, 1916.

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Health Law and the Sanitary Code. Not all health officers have yet discovered the special rules and regulations of the department for the exclusion of school children, which should be in the pocket of every health officer and in the *desk* of every school teacher.

In seeking contacts, under ordinary conditions, the source of information will be the patient himself, who is apt to know best who has been exposed. If the patient is a child, it is obvious that it may be necessary to seek information from other sources, as the parent or the school teacher. The patient may be too sick to be questioned, a matter which should always be left to the attending physician. Conditions may arise which make it necessary to accept the information given "with a grain of salt." Not all patients are as frank as the one who recently confessed to one of my health officers that she had been frequently kissed by a young man who later developed measles. In my own city the proprietor of a small grocery store had an attack of mild smallpox; while he undoubtedly knew the nature of his disease, he continued at work, apparently keeping out of sight of those likely to discover his condition; he had been an opponent of vaccination, and neither he nor any of his family had been vaccinated, from the fact that it would naturally prove embarrassing to him to have the facts known to the patrons presumably exposed, it was clearly inadvisable to place too much dependence upon his statements as to the number of persons implicated.

The possibility of a number of persons, particularly children, being exposed through Sunday-schools, parties and other public gatherings should not be overlooked.

In smallpox alone does the Sanitary Code state specifically the procedure to be followed. Regulation 30, Chapter II, provides that after a smallpox patient has been removed to a hospital every inmate of the household and every person who has had contact with the patient or his secretions or excretions shall either be vaccinated within three days of the first exposure or placed under quarantine presumably for 20 days, the maximum period of incubation, from the date of the last exposure. It is required that those released after vaccination shall be kept under daily observation until successful vaccination results, or, if there is no result from vaccination, for at least 20 days. Where the patient cannot be removed to the hospital, the Code provides that every inmate of the household shall be vaccinated or strictly quarantined until discharged by the local health officer.

It need hardly be said that in vaccinating contacts all possible care should be used to insure the vaccine being fresh and active. In the village of Oxford, during our smallpox outbreak last fall, some 200 persons were vaccinated unsuccessfully, the failure of the vaccine to act being afterwards attributed to contact with steam pipes in transit. This naturally created a situation which was annoying and embarrassing.

In measles, over which we have comparatively little control by resort to ordinary methods, the discovery and observation of contacts is even more important than the isolation of well-developed cases, since it is now well known that the disease is most readily communicated in the early catarrhal stage, before the appearance of the eruption.

In at least one instance in my own city an outbreak of measles, starting in a schoolroom, was checked in its incipency by a daily examination of all children exposed in the school, and a visit to

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Give one to three ounces every hour or two, according to the age of the baby, continuing until stools lessen in number and improve in character.

Milk, preferably skimmed, may then be substituted for water—one ounce each day—until regular proportions of milk and water, adapted to the age of the baby, are reached.

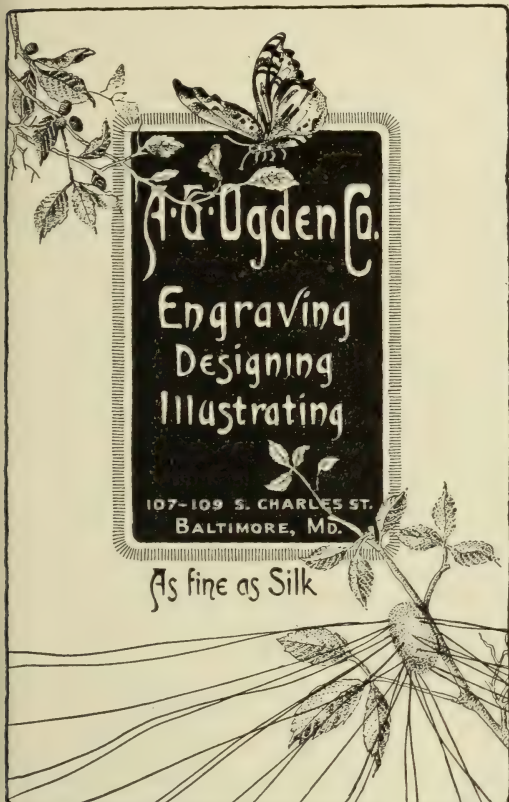
the home of every child out of school where the cause of absence was not definitely known. In this instance we had the assistance of a visiting nurse. If a nurse of experience and intelligence is not available, and the control of an outbreak of communicable disease devolves entirely upon the health officer, usually a busy practitioner, it will mean a personal sacrifice, but the results will be such as to amply justify the sacrifice. Few competent health officers are fully compensated, under present conditions, for the service they render to their communities. Those who are well paid for all they do are not, in most instances, the most efficient men in the field.

One of my health officers, who is also the medical examiner of school children in a small village, keeps in his office a record of each school child examined, with reference to the history of communicable diseases. During a recent outbreak of measles, securing the co-operation of the proprietor of the local moving-picture theater, he furnished the ticket-taker with a list of all children who had not had measles, and they were excluded from the theater. When some of them protested, claiming that they had had the disease, they were referred to the health officer and confronted with their previous statements. Whether or not this is a scheme to be recommended for general adoption, it at least shows an intelligent effort to make use of available information.

In examining measles contacts the closest observation should prevail from the eighth to the fourteenth day, and all presenting acute catarrhal symptoms isolated from contact with those who have not had the disease, and it should be borne in mind that not infrequently Koplik's spots appear in advance of the skin eruption.

Again, in scarlet fever, the locating of contacts is highly important, since only in this way the mild cases chiefly responsible for the spread of the disease is discovered. Certain points should be kept clearly in mind; the incubation period may be two days or less, and action must be prompt to be effective; the disease is infective in all stages, and is transmitted through the secretions, and not through the scales; many physicians, and some health officers, have not yet discarded the time-honored theory that the scales are the chief, or, indeed, only source of the spread of the disease; children between the ages of 2 and 5 are most susceptible. During the prevalence of scarlet fever every sore throat should be held guilty until its innocence has been proven. As a precaution it would be well to take a throat culture from every suspicious case. Many scarlet fever outbreaks have been kept alive through the tendency of physicians to disregard sore throats which do not present a classical clinical picture.

Among employes of concerns handling milk it is often advisable to resort to somewhat extreme measures to anticipate contact infection. Corporations shipping milk to New York City usually stand ready to co-operate with health officers in any effort to avoid the occurrence of communicable diseases in their plants, in view of the serious annoyance and expense which may thereby be avoided. During my term as health officer two children in the family of an employe of the local branch of a commercial milk plant had scarlet fever. A diagnosis was not made until the second child had become ill, and in the meantime the father had remained at work, without missing a day. Several men working in the same room with him developed the disease. A careful



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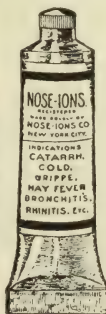
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inquiry revealed the fact that for two days he had had a sore throat and had not felt well. For seven days an examination was made each day of the throats of about 200 employes, and all whose throats or general condition was at all suspicious were temporarily isolated.

It should hardly be necessary to call attention to the importance—where a number of contacts are being examined—of using separate tongue depressors and carefully sterilizing clinical thermometers; yet not long ago I heard of a health officer who went through a school, seeking suspicious throats, and used the same tongue depressor throughout, without even resorting to the use of cold water.

In diphtheria, as in scarlet fever, susceptibility varies with age, nursing infants presenting marked resistance. A certain number of persons other than those who have had the disease are relatively immune. The Schick test bids fair to prove of great value in determining what contacts may safely be regarded as immune.

Among those who have been in close contact with cases, particularly among children, two successive negative cultures should be required before releasing them from quarantine. In the absence of the Schick test, all presenting positive cultures should be immunized. It should be recalled that the immunizing effect of diphtheria antitoxin is short-lived, continuing ordinarily from two to three weeks. While it is of rare occurrence, the possibility of the occurrence of anaphylactic reactions should not be overlooked.

As required in making cultures for the removal of quarantine, cultures should be made from the throat and nose. Not infrequently a nasal culture will prove positive when the throat is negative. Whether or not cultures made from the throat present organisms also depends to a large extent upon the way in which cultures are taken. Too many physicians, and health officers as well, include in their swabbing only the anterior surface of the tonsils, securing a negative report when diphtheria bacilli are actually present. On more than one occasion it has been my impression that a deliberate effort was made to avoid the annoying organisms, for the sake of getting patients out of quarantine. Here again we should not forget that not all diphtheric throats present the typical diphtheritic membrane, and that diphtheria bacilli may be responsible for what is clinically a follicular tonsillitis.

Whooping-cough, like measles, is most infective before the development of symptoms upon which a positive diagnosis can be made.

On account of the long duration of infectivity and the other difficulties presented, the control of this disease has been largely neglected. Our efforts during the past year, while productive of results, constitute but a short step in the direction of the control of a most serious disease, with reference to the actual danger to life and the intense and prolonged suffering which it occasions.

A health officer who takes the position that he should not be expected to "go looking" for cases of whooping-cough, but should act only when cases are reported to him, is unlikely to go so much further as to seek for contacts. I have heard health officers say,

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"I have heard it rumored that there are cases of whooping-cough about, but none have been reported *to me*."

Fortunately, most of the contacts are among school children, and, with school in session, we have an opportunity to keep them under observation. One health officer in Madison county adopted the following plan, apparently with success: Assuming that most of the exposure would occur within the schoolroom rather than out of doors, he arranged with the teachers to seat immune children in the center of the room, from front to back; on one side were seated children who were coughing—a class always present in every schoolroom at most seasons; on the other side were those who had no suspicious cough and had not had the disease. Whenever a child on the "coughing" side presented a cough suggestive of whooping-cough he was promptly sent home and isolated.

A special effort should be made among contacts in the schoolroom to learn where there are babies in the homes, and to isolate the susceptible child from contact with the baby.

Petussis vaccine, now supplied by the Department of Health, may help to solve the problem of prevention.

Before closing I want to refer to two points—the value of a nurse as an assistant in the discovery and control of contacts, and the importance of co-operation between health officers.

A nurse of intelligence, with reasonable tact, can follow a child or other contact into the home and not be particularly unwelcome, when a visit from the health officer might give rise to suspicion and anxiety. More important, even, is the fact that she can give her entire time to work which requires it in most instances. Few of the smaller communities have visiting nurses. In most counties, however, there are one or more nurses who can be interested in health work, and, with some instruction, will become reasonably proficient. In Norwich we have a nurse of broad experience in general nursing who not only has become interested and fairly proficient, but who is the owner of a Ford car. During our small-pox outbreaks in Norwich and Oxford we employed her by the week at the usual trained nurse's fee. While her bill was rather large, the work she did—particularly in connection with small-pox—was such as appealed strongly to the members of the health board, and I am sure they felt that they had made a paying investment.

A few of the health officers in my district notify me regularly when persons exposed to communicable disease leave their jurisdiction when their probable future address is known. This makes it possible for me, in turn, to notify the sanitary supervisor or health officer into whose district the contact is going.

One of my health officers, in our sectional conference later, will give an account of an interesting experience which illustrates, among other things, the possibilities in the way of co-operation. At a dancing party during the Christmas holidays about 50 people were presumably exposed to what was then believed to be diphtheria. Many of them, home for vacations, left immediately after for various parts of the State. The health officer supplied me with the names and addresses of the 50 possible contacts, a circular-letter was sent to each one, stating the facts and advising an immediate visit to a physician in the event of the appearance



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of suspicious symptoms, and the sanitary supervisors or health officers in the various districts to which they had gone were notified. A most interesting feature in connection with this incident is that it later developed that the condition was undoubtedly Vincent's angina rather than diphtheria. One of the contacts was said to have developed Vincent's agina later, which caused her death.

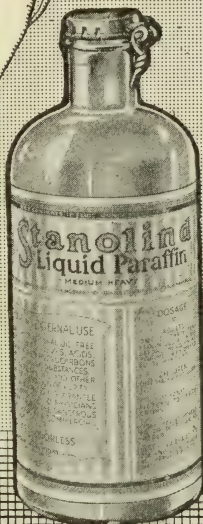
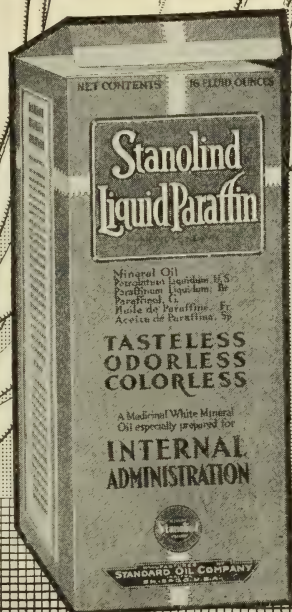
To recapitulate: We have been and still are inclined to attribute too little importance to seeking out and keeping under observation those *exposed* to communicable disease. In some diseases this is perhaps the most important activity in connection with the control of the disease. In order to have his efforts effective every health officer should be conversant with the latest and most reliable data regarding the various communicable diseases, their characteristics and peculiarities, and the methods for their control.

Blind and misdirected efforts are likely to do harm rather than good. He should be familiar with legal limitations and requirements. So long as he retains the office he should stand ready to protect the public health at personal sacrifice if necessary. If he looks upon his office as a "job" worth while only for what it adds to his income, he would be rendering a public service if he would tender his resignation. Information as to possible contacts should be sought painstakingly from various sources if necessary. To "jump at conclusions"—a common practice—results in unnecessary effort without the accomplishment of the desired results. When the occasion demands, he should avail himself, if possible, of the services of a nurse—*surely* one of tact, intelligence and judgment, and, preferably, one of experience in health work. He should bear in mind the fact that his responsibility does not end when those exposed to communicable disease have left his jurisdiction, but that it is his moral duty to follow them "across the border" and contribute to the protection of those in the districts into which they are going.—*Health News*.

ANNUAL REPORT OF THE SURGEON-GENERAL OF THE PUBLIC
HEALTH SERVICE OF THE UNITED STATES FOR THE FISCAL
YEAR 1916. Washington: Government Printing Office. 1916.

With the vast extension and increase of the commerce of our nation it is important that the wide-awake physician should know what new diseases or recrudescences of old diseases appear throughout the world year by year, and the methods which are chosen or invented to restrain them. At any moment he may be brought face to face with any of these, and although it is not to be expected that he will be an expert in their treatment, it is well that he should know something about them.

The incidence of the great plagues in various countries and the methods for excluding them from our own are worthy of perusal. The difficulties of guarding the Mexican border are perhaps the most interesting contents of this year's report, and the war against the ingenious plague-rat has always a fascinating bulletin. Pretty soon all of our seaports will ratproof their buildings. How this is best done, and how sewers can be guarded against becoming rat thoroughfares, one may learn from these reports. Reprints of important subjects worked out by the Service may be obtained at slight cost. A list of these is given.



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THIS Directory is maintained mainly for the benefit of local firms seeking the patronage of physicians and their families. Only well established and reliable concerns will be represented, and doubtless the space at our disposal will be constantly in demand. In responding to these exploitations, the reader will find it mutually advantageous to mention the MARYLAND MEDICAL JOURNAL.

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to foist upon the unwary a crude oil, that had proved injurious upon application, the firm name of Sander & Sons is illicitly appropriated, the make-up of their goods imitated, and finally the medical reports commenting on the merits of their excellent preparation are made use of to give the desired luster to the intended deceit.

This fraud, which was exposed at an action tried before the Supreme Court of Victoria at Melbourne, and others reported before in the medical literature, show that every physician should see that his patient gets exactly what he prescribed. No "just as good" allowed.

Treatment of Hay Fever.

NOTWITHSTANDING the many "specifics" and "near-specifics" for hay fever that have been pushed forward in recent years, the disease, if not precisely enigmatical, continues to baffle and perplex. It is evident that no single therapeutic agent has arisen that can eliminate, or even modify, the symptoms in all cases. Individual sufferers present problems that are peculiar to themselves, and other than the vasomotor relaxation of the upper respiratory tract, which is common to all, there are no uniform underlying pathologic changes.

Fortunately there are some very satisfactory alleviants. The suprarenal substance, in the form of its isolated active principle, Adrenalin, is undoubtedly one of the best of these. Experienced practitioners say that in a large majority of cases it successfully controls the symptoms. Adrenalin Chloride Solution and Adrenalin Inhalant are the preparations commonly used, being sprayed into the nares and pharynx. The former should first be diluted with four to five times its volume of physiologic salt solution. The latter may be administered full strength or diluted with three to four times its volume of olive oil.

Another agent of large promise in the treatment of autumnal hay fever is Ragweed Pollen Extract. Its use is based upon the generally accepted theory that this type of hay fever, with occasional exceptions, is due to the pollen of ragweed. An accurately standardized product is supplied by Parke, Davis & Co. It is administered hypodermically.

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FAMILY ALLOWANCE, INDEMNITY AND INSURANCE
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DUTY OF A JUST GOVERNMENT.

By W. G. McAdoo,
Secretary of the Treasury.

THE number of claims for exemption from military duty under the draft law has caused a painful impression in many quarters, but after all, does not the fact that no provision has yet been made by the Government for the support of the wives and children, mothers or fathers of the men who have been drafted explain many of these claims for exemption?

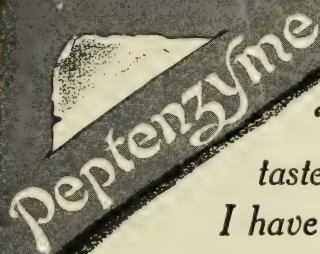
Under the draft law the Government has the power to require every able-bodied man between 21 and 31 years of age to perform military duty. Thousands of the drafted men are wage-earners who married years ago and are the sole support of dependent families. So long as the Government has made no provision for the care of these dependents it is natural that such drafted men should seek to protect their loved ones by staying at home. I am sure that if the Congress should promptly enact the pending war insurance bill, which makes definite allowances for the support of the dependent wives and children, fathers or mothers of our soldiers and sailors, claims for exemption on that score will cease. This is an imperative duty of the Government. We cannot deprive helpless women and children of the support of the wage-earner by forcing him into the military service of the country unless the Government substitutes itself as their support.

Imagine the emotions of the man who is called into the military service of his country with full knowledge that his loved ones are left without means of support and may be reduced to want unless the charity of the community in which they live comes to their relief. It would be nothing less than a crime for a rich and just Government to treat its fighting men so heartlessly and to subject their dependent wives and children, who are unable to fight, to greater suffering than if they could fight.

The morale of an army is as essential to its effective fighting power as guns, ammunition and other instrumentalities of war. Of equal importance is the morale of the civil population which must support the armies in the field. We cannot have this essential morale unless the nation comforts the men in the ranks with the knowledge that everything possible will be done for them and their families, and renders to the civil population at home the assistance which will make it most effective in upholding the Government and the fighting forces.

The purpose of the war insurance bill now pending in the Congress is to secure the future of America's soldiers and sailors by insuring their lives and providing adequate compensations and indemnities for loss of life and total or partial permanent disability; also to protect their families against poverty and want by providing them with sufficient means of support during the absence of the men at the front.

The nation, having been forced to resort to the draft in order to create quickly an army to save the country, is under a higher obligation to do these things for its fighting forces than if a volunteer army only was created. This great and rich republic cannot afford to do less, and it must do what is proposed in a spirit

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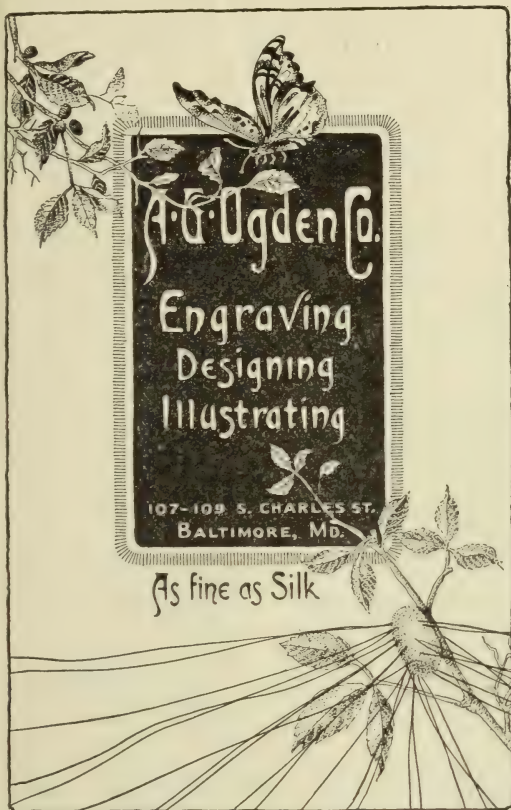
of gratitude, and not as charity. Every soldier and sailor who serves his country in this war will earn everything the proposed war insurance bill provides; to be a beneficiary of the proposed law will be a badge of honor.

When we draft the wage-earner, we call not only him, but the entire family to the flag; the sacrifice entailed is not divisible. The wife and children, the mother, the father, are all involved in the sacrifice—they directly share the burden of defense. They suffer just as much as the soldier, but in a different way, and the nation must generously discharge as a proud privilege the duty of maintaining them until the soldiers and sailors return from the war and resume the responsibility.

We have drawn the sword to vindicate America's violated rights, to restore peace and justice, and to secure the progress of civilization. We cannot permit our soldiers, while they hold the front, to be stabbed in the back by uncertainty as to what is being done for their loved ones at home. Our tomorrows are in their hands—theirs in ours. The national conscience will not permit America's soldiers and their dependents to go unprovided with everything that a just, generous and noble people can do to compensate them for the sufferings and sacrifices they make to serve their country.

Aside from the care and protection of their dependents while the soldier is alive, the proposed war insurance act provides for definite compensation for his dependents in case of death, for definite and adequate indemnities in case of total or partial disability and for re-education of the maimed and disabled man, so that he may take up a new occupation and make himself a useful member of society. We must restore their efficiency and adjust their still available faculties and functions to suitable trades and vocations, which the injuries of the battlefield have not wholly destroyed. The heavy depletions in man-power resulting from this conflict, which is without precedent in history or imagination, will place new and greater values upon all forms and degrees of human energy, and demand as a first duty of intelligent government that every remaining useful sense and limb of the blind and crippled shall be reclaimed under the benevolent processes of education and reapplied to economic uses for the benefit of society. The millions we shall be called upon to spend to support the dependents of the soldiers while they are in the fighting line, for indemnities and for re-education of the crippled, are in the last analysis investments of the best sort; they are sums of capital advanced by the nation to promote utility, self-respect and economic development. More than all, they are essentially humanitarian and in the highest sense a discharge by the Government of an essential duty to society.

Military service is now obligatory; those who imperil themselves have no election. The insurance companies do not and cannot permit this fact to affect their calculations. They must protect themselves by charging premiums so high that they are secured against loss no matter how severe the rate of mortality may be. Consequently, the very men who are called into the service because their physical condition is of the best and who as civilians would for that reason be able to secure the most favorable insurance rate in peace time, are denied as soldiers the necessary life insurance to enable them to protect their families and



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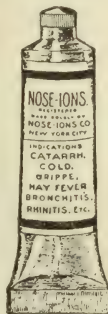
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dependents. The tremendous rates charged by private insurance companies to protect them against the extra-hazardous risks of war put insurance entirely beyond the reach of the conscripted soldier.

Military necessity has, therefore, subjected the most fit subjects for insurance to an insurmountable discrimination unless the Government itself supplies insurance at cost and upon a peace basis. It would, in fact, be dastardly and undemocratic if the Government should penalize the soldier who is forced to render the highest duty of the citizen by its failure to provide war insurance upon peace terms and at net cost, first, because the pay of the enlisted men in the Army and Navy is less than the wages and salaries generally earned in private life, which reduces their investing capacity; and, second, because Government insurance is an essential war and emergency measure, inaugurated for the specific benefit of our military forces, and cannot and should not be conducted for profit.

Such overhead charges as agents' commissions, advertising, promotion, local rentals, etc., are eliminated. The Government must assume the cost of administering this benevolent agency, just as it bears the cost of administering all other Government agencies established for the benefit of the people.

This legislation will be a great step forward in the recognition of the republic's duty to its heroes. I consider it the most significant and progressive measure presented to Congress since the declaration of war. It immediately affects the well-being of a greater number of persons than any act with which I am familiar. It deserves the earnest and vigorous support of the country. It provides the broadest and most liberal protection ever extended by any government to its fighting forces and their dependent families. The United States, the most progressive and prosperous nation on earth, setting an example in the ideals for which enlightened humanity is fighting, should set the highest example of all the nations in the treatment of those who do and die for their country and for world freedom.

We are proposing to expend during the next year more than \$10,000,000,000 to create and maintain the necessary fighting forces to re-establish justice in the world. But justice must begin at home; justice must be done to the men who die and suffer for us on the battlefields and for their wives and children and dependents who sacrifice for us at home. To do justice to them requires only a tithe of the money we are expending for the general objects of the war. Let it not be said that noble America was ignoble in the treatment of her soldiers and sailors and callous to the fate of their dependents in this greatest war of all time.

The pending war insurance bill gives compensations, not pensions; it fixes amounts definitely in advance instead of holding out the mere chance of gratuities after the conclusion of peace. It saves the dependents from want and gives them the necessities of life while their men are at the front. It deals with its heroes liberally for the sufferings that result from their disablement on the field of battle, and, if they die, it makes just provision for the loved ones who survive them. It fosters the helpless and dependent, the maimed and disabled, and recognizes the immensity of the nation's debt to the valor and patriotism of her heroic sons.

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To further enhance the rating of Portland, Ore., the Board of Health is making use of the card system for informing patrons of the cleanliness of the various shops they patronize.

A store handling food products of any kind is required to display an "A" card if its sanitation averages 90 per cent. or more, as governed by the rules of the Health Board. "B" indicates that the methods of the shop are only up to 80 per cent., and "C" covers anything under 80 per cent.

The card must be displayed in such a place that every patron of the shop may see it, and frequent inspections by officers of the city cause this requirement to be obeyed.

Portland is very jealous of her rating as the second healthiest city in the United States, and is doing everything within reason to raise the rating. It is believed that her temperate zone climate and purest of pure water will be materially aided in giving Portland the boost she craves.

A very noticeable improvement in all shops has been noticed since they have been required to advertise the degree of sanitation they maintain. Each merchant seems to be now anxious to get an "A" rating. Some merchants are advertising the fact that their shops rate approximately 100 per cent. clean.

FRAUDULENT INFANTILE PARALYSIS "CURES."

OFFICIALS of the Department of Agriculture charged with the enforcement of the Food and Drugs Act expect that the outbreak of infantile paralysis will tempt unscrupulous persons to offer for sale so-called "cures" or remedies for this dread malady. They therefore have issued special instructions to the Food and Drug inspectors to be particularly alert for interstate shipments or importations of medicines, the makers of which allege that they will cure or alleviate this disease, for which, at the present time, no medicinal cure is known. The officials also warn the public that any preparation put on the market and offered for sale as being effective for the treatment of infantile paralysis should be looked upon with extreme suspicion. Inspectors accordingly have been instructed to regard as suspicious and to collect samples of all medicine in interstate commerce for which such claims are made. Makers of such fraudulent remedies will be vigorously prosecuted whenever the evidence warrants action under the Sherley amendment to the Food and Drugs Act. So-called remedies for infantile paralysis which are offered for import into the country will be denied entry.

The Food and Drug officials are particularly watchful in this instance, because it has been noted in the past that whenever a serious epidemic exists unscrupulous dealers prey upon the fear or ignorance of the public by flooding the market with worthless, hastily-prepared concoctions, for which they assert curative properties which have no foundation whatever in fact. In the present instance inspectors already have discovered shipments of a few such mixtures.

The Department will do everything it can under Federal law to protect that portion of the public which is extremely credulous



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in time of panic and which will grasp at anything which promises protection or relief. The sale of such products at this time, the officials point out, is particularly threatening to the public health, because many persons, relying on the false statements of impostors, neglect to secure competent medical advice. As a result, not only is the safety of the patient endangered, but, in the absence of proper sanitary precautions, the likelihood of contagion is greatly increased.

It must be understood, however, that the Federal Food and Drugs Act applies only to products which are shipped in interstate commerce—that is, from one State to another, or which are offered for import or export, or which are manufactured or sold within a Territory or the District of Columbia. Products which are made and consumed wholly within a single State are subject only to such State laws as may apply, and are under the control only of State health officials. The Federal law does not apply, for instance, to patent medicines made within the State of New York and sold in New York city. Persons buying or using a “remedy” made in their own State, therefore, must rely on the protection accorded them by their local health authorities.

COLLECTED PAPERS OF THE MAYO CLINIC, Rochester, Minn.
Edited by Mrs. M. H. Mellish. Vol. VIII. 1916. Philadelphia and London: W. B. Saunders Company. 1917. Price \$6.50.

Anyone who wishes to understand the great reputation of the Mayo Clinic and the devotion to its methods of those who have worked in it has only to read this volume through. In it he gets an insight into the remarkable spirit of scientific thoroughness which pervades the work. It is as if some medieval brotherhood of men consecrated body and soul to the service of their profession were transformed into a modern surgical brotherhood, pursuing the most recent methods of technique and giving to each patient a study undisturbed by any worldly concern, with leisure for the working out of new scientific and healing problems. Its ideal is that of Dr. Stokes, “an organization that saves to its staff a few precious hours of leisure in which to mull over its patients, to know them, to sit on a stool and watch them, absorbed in thought.”

Yet the papers in this volume are the work of first-class hustlers. They are from some forty pens, perhaps a hundred articles in all. Our attention is specially arrested by several, though all are good. There are valuable papers on focal infection from dental faults, for instance. There is a very instructive and finely-illustrated brace of reports on the surgery of bronchiectasis, “a chronic, loathsome disease, generally regarded as incurable,” the radical surgical treatment of which is so difficult that in comparison with it “pelvic surgery is playground work.”

The illustrations of loose bodies in the knee-joint are very fine. The studies in anterior poliomyelitis suggest a harmonizing theory for the various alleged causative germ forms.

Amongst the most profitable articles are those analyzing the errors of surgical diagnosis and practice, of which there are several, and those on teamwork among the staff of workers in hospitals.

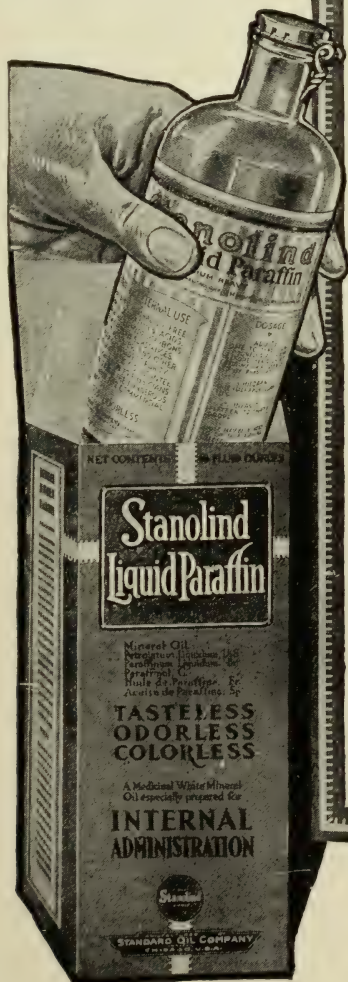
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LOCAL DIRECTORY

THIS Directory is maintained mainly for the benefit of local firms seeking the patronage of physicians and their families. Only well established and reliable concerns will be represented, and doubtless the space at our disposal will be constantly in demand. In responding to these exploitations, the reader will find it mutually advantageous to mention the MARYLAND MEDICAL JOURNAL.

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to foist upon the unwary a crude oil, that had proved injurious upon application, the firm name of Sander & Sons is illicitly appropriated, the make-up of their goods imitated, and finally the medical reports commenting on the merits of their excellent preparation are made use of to give the desired luster to the intended deceit.

This fraud, which was exposed at an action tried before the Supreme Court of Victoria at Melbourne, and others reported before in the medical literature, show that every physician should see that his patient gets exactly what he prescribed. No "just as good" allowed.

For the Clogged Liver.

WHEN the liver does not act as it should, the zest of life departs, and the saying that "life and living depend upon the liver," although somewhat facetious, contains more than a modicum of truth. An engorged liver, of course, signifies that the organ requires active stimulation, especially when the condition is attended by manifestations of auto-toxemia. If any one fact has been more definitely established than another it is that such stimulation should not be brought about by the use of drastic cathartics, for if so, the remedy is frequently worse than the disease in its sinister effects. What is particularly needed is a means of stimulation which will satisfactorily increase the functional activity of the liver, without setting up catharsis or over activity of the bowels.

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The Treatment of Rabies.

THE treatment of rabies is essentially preventive since there is no known cure for the disease once symptoms have developed. Rabies may be prevented during the incubation period in persons bitten by rabid animals by prophylactic injections of attenuated rabies virus.

Harris' modification of the Pasteur treatment for the prevention of rabies is prepared by Eli Lilly Company of Indianapolis. By means of this virus a high degree of immunity can be established in 14 days, and by the family physician doing away with the necessity of the patient leaving home and obviating any loss of time and great expense.

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emulsified and ready for use. All that is necessary for the physician to do is to place an order with the druggist who will telegraph the nearest Lilly depot. The first three doses will be promptly available and thereafter one freshly prepared dose will arrive daily for 11 days, thus completing the treatment in 14 doses, one daily. The dosage is standardized in units, the virus is non-toxic and the treatment free from complications.

An interesting booklet on "Rabies and Its Treatment" will be sent to readers of this journal on request made to Eli Lilly & Company at Indianapolis.

The Cerebral Irritation of Typhoid.

ONE of the most important symptoms of typhoid fever is the cerebral irritation caused by the infection. The patient is already weakened through the severe infection and it is necessary to choose a cerebral sedative that will calm the patient and at the same time be free from a depressing influence on the heart.

Pasadyne (Daniel) is used by many hundreds of physicians for this very reason. It exerts a potent sedative effect, yet does not depress or produce bad after-effects.

Pasadyne (Daniel) is the ideal sedative and especially when the patient is already weakened by reason of infection. Pasadyne (Daniel) is simply a pure concentrated tincture of *passiflora incarnata*. A sample bottle may be had by addressing the laboratory of John B. Daniel, Inc., Atlanta, Ga.

Typhoid Fever.

ATTENTION is directed to a timely announcement which appears elsewhere in this journal over the signature of Parke, Davis & Co., and bears the caption "Typhoid Fever." Prophylaxis

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laxis, diagnosis and treatment, in logical sequence, are briefly and comprehensively considered in this advertisement.

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In the diagnosis of typhoid fever the Typhoid Agglutometer has undoubtedly done much to popularize the Widal test and to extend the usefulness of that valuable diagnostic aid. Parke, Davis & Co. supply two forms of the agglutometer, designated as No. 1 and No. 2. Directions for use accompany each outfit.

For the treatment of typhoid fever Typhoid Phylacogen is an agent of established value. A marked effect of its use in all favorable cases is an early subsidence of the fever and a prompt establishment of convalescence. The technique of dosage and other particulars of

the treatment are covered in Parke, Davis & Co.'s literature on Typhoid Phylacogen.

Heart Troubles.

NUMEROUS persons, especially those of middle age and past and who live a sedentary life, suffer from worrying heart symptoms. As a rule, no organic lesions can be detected, but the functional disturbances which are generally in evidence are a source of constant alarm. Oftentimes, a person's life is made a burden by the pain and other sensations which affect the heart.

Such cases give the physician an infinity of bother. In the first instance, the patient's manner of living must be regulated, appropriate diet must be prescribed and excessive indulgence in narcotics or stimulants must be interdicted.

A regimen of this nature, however, while essential will not effect a complete cure. A therapeutic remedy which will give tone to the tired heart, but which will not act as a spur is needed. The heart requires persuasion in-

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stead of driving. Cactina Pillets will not only effect this object, but possess the great advantage over the majority of heart remedies—that they have no cumulative action. Consequently, there is no safer heart tonic known than Cactina Pillets. In all cases of functional heart affections their use is strongly indicated, for they unfailingly bring back the heart's action to its normal rhythmical ebb and flow and the patient's fears vanish accordingly.

Cod Liver Oil for School Children.

WHEN the need of cod liver oil in a child arises, an important point to have in mind in choosing a preparation is that of palatability. If the child is put on Cord. Ext. Ol. Morrhuæ Comp. (Hagee) the physician may know that he has chosen not only a palatable preparation and one that may be continued for long periods, but also that he has selected a cod liver oil preparation that is of the highest therapeutic worth. In Cord. Ext. Ol. Morrhuæ Comp. (Hagee) are found the essential properties of cod liver oil, and the physician may feel sure that he has chosen the best

product for his little patients who are run down and in need of a tissue builder.

IN neuritis is the hot-water bottle the best anodyne? Palliation, by means of externally applied heat, is just as popular today as it was in Hippocrates' times.

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K-Y Analgesic has the obvious advantage over the hot-water bottle in that "it stays put" for a much greater period of time. Nor is there the possible danger of a hot-water-bottle burn—a factor especially to be thought of where the neuritis patient is weak and infirm.

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OCTOBER, 1917

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had naturally been of powerful physique had been reduced to a state of weaklings, a condition of degeneracy had overtaken the former Red Man of the forest, who had roved at will over vast areas. His habitation was now more or less permanent, and in order to be healthful must be kept clean. This he did not understand nor undertake.

Children were born into surroundings which were far from sanitary, with possibly a drunken father and mother, neither of whom had made any preparations for the arrival, the care or the maintenance of such a child. Is there any wonder such a one frequently succumbed before the end of the second summer after its advent into such a vale of tears?

Those who escaped death by a narrow margin through the years of childhood and reached manhood and womanhood arrived there too frequently only to become a subject to be preyed upon by some such disease as tuberculosis or trachoma. Too often the young Indian arrived at adolescence already scarred and disfigured by the former and frequently blinded by the latter.

Is it so very strange, then, that these poor people for whom we had been so zealously guarding their land, their timber, their mines, their oil and gas, and possibly been negligent of their health, their lives, should finally furnish food for thought for a sculptor who would mould his thoughts into a statute like "The End of the Trail?"

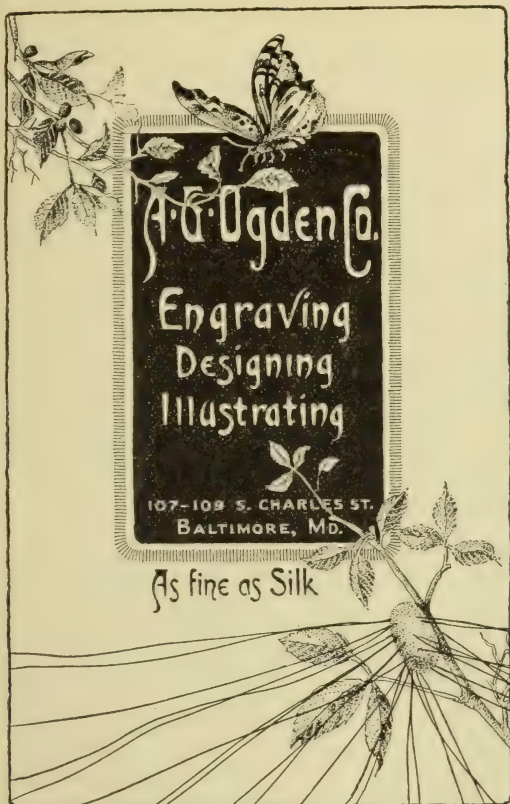
The Indian *had* passed into a state of decadence, and a lethal issue was imminent for the entire race when three years ago the present Commissioner of Indian Affairs faced the condition squarely and said: "To discover such a condition and not correct it were criminal." With this object in view every wheel in the machinery of the Bureau of Indian Affairs was set turning to correct the conditions which had made the Indian a dying race. He said: "There is something fundamental here; we cannot solve the Indian problem without Indians. We cannot educate their children unless they are kept alive."

Commencing with that period, three years ago, originating with the Commissioner of Indian Affairs and passing on down through every office and field employe, there has been an awakening, a quickening. Each one was made to feel that here was the great, the vital work of the service, without which all the other would be worse than useless.

The great value of medical and surgical skill and service was seen and appreciated; therefore, more doctors, ophthalmologists and dentists. For getting the best results from the work of the physicians the invaluable assistance of the trained nurse was recognized, and this branch of the service was augmented and improved. There was still a broad field which had not received the attention it deserved. The field matron, that sturdy champion of cleaner and better homes, restored constitutions and improved health and babies to be proud of, she now came into her own.

Then came that glorious campaign to save the babies. This again originated with the Commissioner and was taken up enthusiastically by practically every employe of the Indian Service. In the Commissioner's famous letter to the field upon this subject, he said, in part:

"If we have an Indian policy worthy of the name, its goal must be an enduring and sturdy race, true to the noblest of its original



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Campetrodin No. 2 is double strength, and is dispensed only when designated. This form is especially valuable in reducing swollen glands, and in relieving obstinate, deep-seated rheumatic and neuralgic pains.

Campetrodin is marketed in one, three and eight-ounce bottles, retailing for 25c., 50c. and \$1.00 respectively, and Campetrodin No. 2, retailing for 35c., 75c. and \$1.50.

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The trained nurse, with her technical knowledge, was called upon to care for the sick as only a trained nurse can. The field matron, the farmer, the teacher—in fact, every field employe was soon an enlisted soldier in this army to fight in a campaign to restore the constitution, to regain the health, to save a race that had by competent persons been proclaimed to be dying.

"Baby Shows" have become a part of every Indian fair, "Baby Weeks" and "Child Welfare Exhibits" have been carried out on nearly every reservation in the Indian country. "Mothers' Meetings" have been instituted, "Little Mothers' Leagues" formed, and other educational features have been made a part of this campaign, with the idea of teaching the Indian mothers the proper way of caring for their children.

This campaign was far from being an easy one. Much was required in order that it might be carried out as planned. The hospitals were neither numerous enough nor well enough equipped to meet the demands upon them. The number of thoroughly-qualified physicians in the service was far too small. More trained nurses were needed, as were also field matrons. A diffusion of knowledge along lines of sanitation through the distribution of literature in the field was urgently needed. How these conditions and demands were met may be seen by the following figures:

In 1912 the medical force of the Indian Service consisted of:

- 1 medical supervisor,
- 2 ophthalmologists,
- 1 physician expert,
- 1 assistant physician,
- 89 agency physicians,
- 53 contract physicians.

This force has been increased until now it consists of:

- 3 medical supervisors,
- 7 ophthalmologists,
- 130 agency physicians,
- 76 contract physicians,
- 7 field dentists,
- 6 field nurses.

In addition to these there are also substantial increases in the number of hospital nurses, field matrons and miscellaneous hospital employes, the exact number of which cannot be easily computed.

Besides this, note the increase of General Health Appropriation, known as "Relieving Distress and Prevention, etc., Diseases Among Indians":

Fiscal year 1911.....	\$40,000
Fiscal year 1912.....	60,000
Fiscal year 1913.....	90,000
Fiscal year 1914.....	200,000
Fiscal year 1915.....	300,000
Fiscal year 1916.....	330,000
Fiscal year 1917.....	350,000

To be requested for the year 1918 will be \$400,000. The amount used for this purpose having been multiplied by 10 during the last eight years, the larger part of the multiplication



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having occurred in the past three years, and the results obtained have more than justified the expenditure.

What has been done with this money? Here it is, in part:

Hospitals built or under construction during 1914 and 1915 at the following places at a cost ranging from \$3030 to \$48,954 each: Blackfeet, Mont.; Carson, Nev.; Cheyenne and Arapahoe, Okla.; Mescalero, New Mex.; Pima, Ariz.; Turtle Mountain, N. D.; Navajo, Ariz.; Albuquerque, Pueblo, Laguna, New Mex.; Fort Peck, Mont.; Moqui, Ariz.; Tohatchi, Ariz.; San Juan, New Mex.; Spokane, Wash.; Winnebago, Neb.; Canton Asylum, S. D.; Cherokee, N. C.; Fort Totten, N. D.; Cheyenne River, S. D.; Choctaw-Chickasaw, Talihina, Okla.; Fond du Lac, Minn.; Kiowa, Okla.; Leech Lake, Minn.; Pine Ridge, S. D.; Red Lake, Minn.; Rosebud, S. D.; Standing Rock, N. D.; Fort Lapwai Sanatorium, Idaho; Sac and Fox Sanatorium, Iowa; Phoenix Sanatorium, Arizona; Crow Hospital, Crow, Mont.; Truxton Canon, Ariz.; Jicarilla, New Mex.; Crow Creek, S. D.; Hoopa Valley, Cal. This vast number of well-equipped hospitals are well distributed over the Indian country.

Besides, there has been an immense amount of valuable literature both gathered and prepared in the form of pamphlets and then distributed in the field, of which these are some: "Indian Babies: How to Keep Them Well"; "Save the Babies" number of *The Red Man*.

Distribution of the United States Health Bulletins on such subjects as: "Sewerage Disposal," "Poliomyelitis," "Summer Care of Infants," "Tuberculosis," "Typhoid Fever: Causation and Prevention," "Sewerage-Polluted Water Supply in Relation to Infant Mortality."

The following books and journals have been distributed to school and agency physicians: *Journal of American Medical Association*, *Therapeutic Gazette*, *Fuch's Ophthalmology*, *Roseneau's Preventive Medicine and Hygiene*, *Pulmonary Tuberculosis* (Fishberg).

And copies of Brown's "Rules for Recovery from Tuberculosis" were distributed to field matrons.

These were all prepared, distributed, read and put into execution in carrying out this great health-education campaign.

What were the results of all this expenditure of funds, enthusiasm and effort on the part of all those thus engaged in refuting the too-oft-repeated statement that the Indian was a dying race?

The Indian's constitution has been restored, his health conditions improved and death rate decreased wherever there are Indians to be found. Babies who before had been born into surroundings contributing every cause for an early death now come into the world where previous preparation has been made, in a clean home or in a hospital where the mother was cared for and taught properly to care for her offspring. Such babies come to stay, and are making statistics show to the world that the Indian is not a dying race. Besides, they are filling happy homes, where before they had proven to be the despair of heart-broken parents who had seen them come only to find a place in their affections and then be taken from them by diseases they knew not how to control.

(Concluded in November Number.)

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LOCAL DIRECTORY

THIS Directory is maintained mainly for the benefit of local firms seeking the patronage of physicians and their families. Only well established and reliable concerns will be represented, and doubtless the space at our disposal will be constantly in demand. In responding to these exploitations, the reader will find it mutually advantageous to mention the MARYLAND MEDICAL JOURNAL.

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to foist upon the unwary a crude oil, that had proved injurious upon application, the firm name of Sander & Sons is illicitly appropriated, the make-up of their goods imitated, and finally the medical reports commenting on the merits of their excellent preparation are made use of to give the desired luster to the intended deceit.

This fraud, which was exposed at an action tried before the Supreme Court of Victoria at Melbourne, and others reported before in the medical literature, show that every physician should see that his patient gets exactly what he prescribed. No "just as good" allowed.

Accurate Concepts in Electronic Diagnosis.

IN the last issue of the classical quarterly *The International Clinics* there appeared a contribution by Dr. Albert Abrams, A.M., LL.D., M.D. (Heidelberg), F. R. M. S., of San Francisco bearing on the subject "The Electronic Reactions of Abrams."

This is perhaps one of the most radical attempts ever made in medicine and in diagnosis. It is based on the fact recognized by physicists that the ultimate constituent of the body is the electron and not the cell.

These electrons in their incessant activity create a field of radio-activity which always has a definite rate of vibration.

Unfortunately there are no instruments of sufficient sensitivity to enable one to detect these radiations.

The discoverer of radium demolished precipitously the established theories of matter and force, so that chemistry was forced to be rewritten and our conception of this constituent of matter completely changed.

Abrams has found that the reflexes bearing his name and which have been fully exploited in the last volume of "The Reference Hand Book of the Medical Sciences" are so sensitive that they can be utilized in the diagnosis of disease. Not only is it possible to diagnose disease with mathematical accuracy, but one can measure with the same precision the virulency of affection. These methods have revolutionized the early diagnosis of cancer, tuberculosis, syphilis and other diseases. Thus we are able to say how efficient antisiphilitic treatment is when it is necessary and how long to continue it.

In a recent communication by Geo. O. Jarvis, A.B., M.D., formerly of the University of Pennsylvania, he found that the electronic tests of Abrams was positive in nearly 100 per cent.



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of syphilitic infection, whether they were hereditary or acquired.

Another important feature of Abrams' tests is the ability to recognize congenital from acquired syphilis.

The reaction in syphilis, like in other diseases, is always present.

Another feature of these reactions is the fact that a diagnosis may be accurately made from the blood. The discoverer of these methods is most anxious to introduce them to the medical profession, and he invites correspondence with relation to the same. Specimens of blood sent to him and placed on a slide or paper will be gratuitously examined, and reported on by him.

Any physician of sufficient intelligence may learn these methods provided he is capable of recognizing by percussion an area of dullness, and Dr. Abrams is most anxious to aid the profession in the interpretation of his methods.

Physicians are accordingly invited to write Dr. Albert Abrams, 2135 Sacramento St., San Francisco, Cal., for both a blood test and further information concerning his diagnostic methods.

The Rational Treatment of Atonic Dyspepsia.

GLANDULAR inactivity of laziness is probably the chief cause of the various manifestations of dyspepsia and indigestion. In the stomach this common disorder causes the usual symptoms of pain, fermentation and distress, which it is not necessary to discuss, and also unquestionably contributes to the development of gastrectasia and ptosis. In fact, it is surprising how many cases of organic disease of the stomach result from the commonest dyspepsias improperly treated or not treated at all.

In such cases of dyspepsia and atonic indigestion, in which the glands of the stomach are not doing their full share of work, and the muscular insufficiencies which eventually result

are in the making, instead of giving muscular stimulants like strychnia, one should try to promote *the work of the glands* by using a recognized secretant like Seng. This well-known product of the laboratories of the Sultan Drug Co., St. Louis, Mo., is a remarkably efficient stimulant to the gastric glands. The simplest test will prove its value, and show the wisdom of aiding and promoting physiologic functions rather than to supply substitutes. The usefulness of Seng has been demonstrated in all forms of atonic indigestion, particularly those incidental to neurasthenia, general debility and protracted convalescence from fevers, surgical operations and so on.

Fallacy of Phlebotomy.

A FEW decades since, bleeding or phlebotomy was the universal practice with physicians in the treatment of pneumonia. This procedure usually served to reduce the fever and inflammation, and at least tended to give temporary relief by lowering the temperature and pulse rate. This was frequently misleading, as the temperature and rapid pulse beat would often return in a few hours with renewed activity, thus proving the fallacy of the procedure. In many cases of pneumonia the patient is anemic and phlebotomy is detrimental and positively contraindicated, the loss of the vital fluid only made it the more difficult for the patient to recover. However, at the present time there is no necessity for phlebotomy, as we have in our hands an agent which accomplishes all of the good effects of phlebotomy with none of the possible evil effects. The preparation, Antiphlogistine, applied over the chest wall bleeds the patient in to his superficial capillaries—and may be used with much benefit on all cases of pneumonia.

Recently I was called to see E. C., a girl of eight years. On careful examination I diag-

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nosed the case as one of pneumonia with all the characteristic symptoms of this disease. Her condition was critical. Pulse 150, temperature 105. The first step was to at once apply Antiphlogistine warm and thick, enveloping the thoracic wall completely. I gave a few small doses of calomel, Dover's powders and ipecac; then veratrum viridi and salicylate of sodium. On my visit the following day I found my patient somewhat improved. I ordered a fresh application of Antiphlogistine every 12 hours. The case continued to improve, and in seven days the girl was so much better I dismissed the case. I consider Antiphlogistine the "sine-qua-non" in the treatment of pneumonia.

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merely a distinctive name used to distinguish our *passiflora* product from other similar preparations, but of inferior therapeutic worth. We have specialized for more than forty years in making Pasadyne (Daniel). Hence it ought to be a superior product. It is a safe and dependable nerve sedative. It has no concern with the Harrison Act. Write for sample bottle to John B. Daniel, Inc., Atlanta, Ga.

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(Concluded in this Issue.)

Those who had been suffering pain and blindness from the effects of trachoma have now found relief and now live to bless the good Samaritan who brought this relief to their doors. The old and young are coming to realize that grewsome death lurks in filth, and that disease is spread by such agents as the common drinking cup, spitting upon floors and the presence of flies in the house.

These results are further proven by the health reports sent in from the whole country. In proof of this statement, I quote the following:

Dr. Newberne, Traveling Medical Supervisor, reports on San Xavier: "The birth rate for the last fiscal year as expressed in terms of the number of births to the thousand of population was a little more than 40, while the death rate was not much above 16 per thousand, which is no higher than that of some of our best cities."

Dr. Newberne, on Sac and Fox, Oklahoma, states: "From the foregoing figures it will be seen that the aggregate increase in the male population is 12, and that for the female population 34, or a combined increase of 46. This in spite of the fact that an epidemic of smallpox occurred on the reservation which caused 14 deaths."

Dr. Newberne, Poncas: "Into the Poncas tribe there were born 8 males and 11 females, a total of 19, during the last fiscal year, while their deaths amounted to only 5, a net increase for the year of 14."

Dr. Newberne, Shawnee Agency: "The last compiled vital statistics makes the following comparisons of births and deaths for the fiscal year 1915: Eighty-five births, 52 deaths; excess births over deaths, 33."

Dr. Newberne, Turtle Mountain: "During the fiscal year the number of births was 106, the number of deaths was 46, thus showing a net increase in population of 60."

Dr. Newberne, Fond du Lac: "During the last fiscal year there were born 34 children, while the death rate for the corresponding period was 12, showing a net gain in population of 22."

Dr. Newberne, Leupp: "The number of births for the last fiscal year was 110, the number of deaths was 34, thus leaving an increase in the population of 76."

There are innumerable reports of this very same kind, coming as they do from almost every agency in the service, and almost every one showing more or less increase. One superintendent writes an especially interesting health report, which I take the liberty of quoting here:

"The general health conditions at this school and agency have been good.

"No epidemics or infectious or contagious diseases other than tuberculosis and trachoma have been prevalent, except that during the early spring of this year typhoid fever made its appearance at one of our schools, but prompt measures soon eradicated this disease. During the early fall smallpox made its appearance in one family, and although seven members of the entire family

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were brought into contact with the disease, prompt vaccination of the entire family prevented its spreading absolutely.

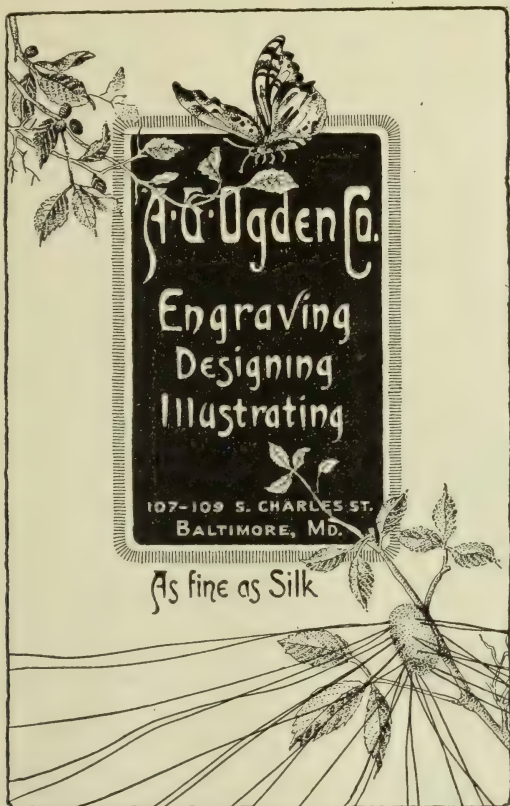
"Sanitary conditions throughout the reservation, especially in and around the Indians' homes, have been very good. We, of course, find numerous cases of trash, but little filth. Our field matrons are giving this matter careful attention, and good results are being secured.

"Agency physicians have done all in their power to relieve the sick and overcome the practice of Indian doctors. Every physician on this reservation is competent to cope with the conditions, and is rendering satisfactory service. Trachoma is the greatest danger confronting our Indians at the present time. Our physicians are all qualified to handle this disease, each of them being practically specialists in its treatment. The Indians' Hospital recently constructed on this reservation will prove a Godsend to the Indians here, and its recent opening will be and has been welcomed by a number of our Indians. While the equipment has not all arrived, we are doing effective work, and when entirely equipped the hospital will be the equal in effectiveness to any in this section of the country."

A stalwart advocate of all things that tend to the uplift of the Indian either mentally, morally or physically, a strong character in the Indian field who has for 23 years fought their battles as if they were his own, has recently said in speaking of the Indians' condition: "I have learned to be a philosopher rather than a pessimist." This man read a paper at the same conference of Indian Workers before referred to, and at its conclusion spoke of "The End of the Trail," saying the time had come to reverse the conditions there depicted, that the Indian was replacing that expression of dejection and despair with one of hope and courage; that he should now right-about face; face eastward, not westward; look upward, not downward; look forward, not backward, and march shoulder to shoulder with his white brother, meeting and surmounting the same difficulties, and thus achieving the same successes together." And this has proven not only possible, but practical, and these very conditions do now obtain because of the greatly-improved health and restored constitutions of the once-enfeebled Indian.

Then a few days later at that 1915 conference came into our midst the Commissioner, dust-covered and sunburned, from a six weeks' stay with the Pimas and Papagoes in the deserts of Arizona, and when he had barely taken time to brush the desert dust from his clothing he announced in his big, whole-hearted, enthusiastic way that the tide had certainly turned, that it could no longer be truthfully said of the Indian that he is a vanishing race. Well-formed plans, by hard and co-operative work, had been successfully carried out, and the desired result had been achieved. The Indian was now on the firm foundation of better health conditions. The birth rate had gotten into the ascendancy over the death rate.

To verify the fact here stated—that is, that this condition has come to stay and is still improving, I will call your attention to these figures which have been collected by States and are accurate, but exclude the five civilized tribes and certain unattached Indians of California, data upon which is not at present available:



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Vital statistics, 1916:

Total Indian population.....	209,224
Total births.....	6,092
Total deaths.....	4,570

Births over deaths..... 1,522

Has not this been a glorious, a beautiful, a great humanitarian success, to have reached down as it were and snatched the noble race of people from the very jaws of death, to have restored the constitutions of men and women who were falling into decay, to have given vision to those who otherwise would soon have been permanently blind, to have given that poor babe at the mother's breast its deserved chance to live? Is not this the greatest, the most ennobling deed possible for anyone to accomplish? It is a thing to attract the attention and call forth the admiration of the civilized world, and certainly marks the most distinct epoch of Indian history.

Who should share in the thanks which are due for the accomplishment of this stupendous task?

The old Indians themselves who have so readily and confidently taken the health suggestions which were made to them. The Indian child who has taken the lessons of sanitation learned in the schoolroom, together with clean rags and soap into his home and accomplished wonders for health there. The returned student from the larger schools with his broader training who has gone to his home and his people with the gospel of cleanliness and health—to all these some thanks are due.

To the matron, disciplinarian, the clerks in school and agency offices and every industrial employe connected with the work who have faithfully taught by precept and example rules which so nearly concern the temporal welfare of all Indians—they, too, should be thanked.

To those faithful, untiring schoolteachers who, every day and at least three evenings in the week, endeavor so earnestly to teach the Indian boy and girl those things which will preserve their health and build constitutions which will save their race, some of them sacrificing every day of their annual leave in order to attend normal school to better fit themselves for the next year's work. We have such teachers, and to them should be extended thanks.

To the physician, the nurse and field matron—these who have ministered unto the sick and afflicted, have cared for the mother and her newborn babe, have watched by a death bed, closed eyes in the last long sleep and spoken words of comfort to the bereaved ones, and have done all this sometimes in the silent watches of the night while others slept—to these there is surely something due.

To the superintendent, that autocrat of the reservation or school who is, or ought to be, the good father of the whole tribe; who settles their domestic and financial troubles, advises them as to all things concerning the home, health and happiness; who should see to it that the newborn infant is provided with swaddling clothes, and that the dead are provided with a shroud and coffin; who can with equal grace perform a marriage ceremony

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or preach a sermon in the school chapel on Sunday evenings—to him let's say "Thank you!"

To those faithful office people, together with inspecting officials, who have so patiently listened to our S. O. S.'s, which we are continually sending in, giving the help when available, and kindly assuring us they are sorry when such help was beyond reach—we all thank them.

The master mind of this great health campaign, the man who conceived and directs it all, whose mental vision is farseeing, whose big heart is overflowing with the milk of human kindness, who found a dying race and, like the great humanitarian he is, placed it high upon a pedestal of safety—God bless him—our Commissioner, Cato Sells.

DECREASE IN MORTALITY FROM PELLAGRA IN 1916.

Insurance Company Issues Encouraging Statistics on This Public Health Problem.

It is gratifying that the death rate from pellagra dropped very considerably in 1916. This is shown by the experience of the Metropolitan Life Insurance Co., which has a large number of policy-holders in the section of the country where this disease prevails.

FAVORABLE TENDENCY OF PELLAGRA MORTALITY.

In recent years pellagra has very rapidly increased in importance as a cause of death. In 1911 the number of deaths in the company's experience was only 277; in 1915 this number had increased to 650. During this period the rate had increased from 3.6 per hundred thousand exposed persons to 6.7. In 1916 the number of deaths dropped to 368, and the rate to 3.6 per 100,000, exactly the same as in 1911. Comparing the year 1915 with 1916 there was a decrease of 46 per cent. in the rate. This drop is observed in many of the Southern districts where the company does business. In the Atlanta district, for example, the number of deaths fell from 50 in 1915 to 28 in 1916; in the Columbus district, from 73 to 29; in Augusta, from 28 to 12; in Charlotte, N. C., from 24 to 12; in Greensboro, from 18 to 8; in Columbia, S. C., from 24 to 11; in Spartanburg, from 15 to 2; in Chattanooga, Tenn., from 21 to 10; in Knoxville, from 29 to 19, and in Memphis from 57 to 41.

PROSPERITY IN THE SOUTH DURING 1916.

The insurance company's statistics make possible a number of interesting deductions with reference to the characteristics of this disease. The very remarkable drop in the rate in 1916 appears to bear out the tentative conclusions of the Government experts who are now studying pellagra, namely, that the disease is not of infectious origin, but is probably one of the so-called "deficiency" diseases induced by insufficient, poorly-balanced dietaries. The year 1914 and the first half of 1915 were periods of depression in the cotton belt, and this was reflected by higher pellagra rates. In the latter part of 1915 and in all of 1916 prosperity prevailed and the industrial and agricultural communities of the South enjoyed a more abundant and varied ration. Future observation and experiment by Government authorities will probably definitely



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determine whether this explanation of the declining death rate of the disease is entirely satisfactory.

NEGROES SHOW HIGHER PELLAGRA MORTALITY THAN WHITE PERSONS.

The experience of the Metropolitan shows, furthermore, that the disease is much more prevalent among the colored people than among the whites and is much more frequent among females than among males. Thus, in the five-year period, 1911-1915, the rate among colored females was highest, 20.3 per 100,000; among the colored males it was 6.4; among the white females, 4.2, and among white males the least of all, 1.7 per 100,000. It would be very interesting to learn why females in this country have, approximately, three times the pellagra mortality rate of males. Another interesting fact is that the incidence of the disease increases with age. There is no exception to this fact up to age 65. After 65 the rate remains fairly stationary.

DISEASE PROBABLY UNDER CONTROL.

Early reports for 1916 which have come from the health authorities of certain of the Southern States are in general agreement with the encouraging insurance figures referred to above. It is to be expected, therefore, that when the full mortality report of the Census Bureau for 1916 appears the condition indicated by the Metropolitan's experience will be found generally true throughout the populations of many Southern States. There is in effect good indication that the measures instituted by the U. S. Public Health Service and the hypothesis upon which their work has been planned are sound, and we may confidently expect that this comparatively new scourge will soon be under control.

BREAD IN THE HOME.

Government Specialists Test Its Value and the Best Way of Preparing It.

IF home-baked bread were uniformly well made it would be used more extensively than at present in place of more expensive foods, say specialists in the United States Department of Agriculture, and this would be a distinct economy. From the standpoint of nutrition it makes very little difference whether breadstuffs are served in the form of bread or in the form of breakfast cereals, side dishes with meat, or desserts. A man engaged in moderate muscular work can profitably consume about three-quarters of a pound a day of breadstuffs in any one of these forms. This quantity is the equivalent of one pound of baked bread. As a matter of fact, however, it is not probable that in the average family this quantity is consumed, and the deficiency is made up by the use of more expensive substances. Of course, bread alone is not sufficient for the maintenance of health, but from both an economical and a hygienic point of view should be used more extensively than it usually is.

In a new publication of the Department, Farmers' Bulletin 807, detailed directions for the making of bread in the home are given, together with a number of convenient recipes for home-made biscuit, rolls and bread in which rice or potatoes are used with flour. The bulletin also gives a score card by means of which it is suggested the housewife can estimate the merit of her product.



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LOCAL DIRECTORY

THIS Directory is maintained mainly for the benefit of local firms seeking the patronage of physicians and their families. Only well established and reliable concerns will be represented, and doubtless the space at our disposal will be constantly in demand. In responding to these exploitations, the reader will find it mutually advantageous to mention the MARYLAND MEDICAL JOURNAL.

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to foist upon the unwary a crude oil, that had proved injurious upon application, the firm name of Sander & Sons is illicitly appropriated, the make-up of their goods imitated, and finally the medical reports commenting on the merits of their excellent preparation are made use of to give the desired luster to the intended deceit.

This fraud, which was exposed at an action tried before the Supreme Court of Victoria at Melbourne, and others reported before in the medical literature, show that every physician should see that his patient gets exactly what he prescribed. No "just as good" allowed.

A Real Tonic.

ACCORDING to recognized authority a tonic is "a remedy which restores enfeebled function and promotes vigor and a sense of well being." A stimulant, on the other hand, is "a remedy which produces temporary exhilaration and excitement of bodily forces, which is soon followed by a reactionary depression."

In the conditions of debility or malnutrition which accompany nervous diseases, wasting disorders and convalescence, the body always requires more than "temporary exhilaration." It needs support, a re-enforcement of function and a general restoration of tone to assure a return to normal conditions. In such cases medical men have found Gray's Glycerine Tonic Comp. a real tonic which can be depended upon to restore the strength and vitality of the whole organism; every organ shows an increase in functional efficiency which is permanent—not temporary and fleeting. As a consequence, physiological processes throughout the body resume their normal activity, the defensive forces become more effective and health is established with its "sense of well being." There is no "reactionary depression" following the use of "Gray's." It is a real tonic in every sense of the word.

Announcement.

At about the time that the *Medical Review of Reviews* was founded, Prof. Dillon Brown of New York established a semi-monthly journal devoted to the diseases of children, called *Pediatrics*. The opening article was by A. Jacobi and the leading physicians of the city, among them J. Lewis Smith, Reginald H. Sayre and William H. Park, contributed to its pages. Latterly it has been edited by William Edward Fitch, but Dr. Fitch has recently been appointed a Major in the United States Army, and we



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have acquired his blue pencil and subscription list.

Pediatrics will no longer appear as a separate publication, but has been incorporated with the *Medical Review of Reviews*. Beginning with January, however, the *Medical Review of Reviews* will contain a special department devoted to *Pediatrics*. This feature is but one of the improvements scheduled for the coming year. Important symposia are now in progress, the editor will contribute a second series of Pathfinders in Medicine, a staff of associate editors is being formed, and thus the *Medical Review of Reviews*, in entering upon its twenty-fourth annual volume, promises to be more serviceable to the profession than ever before.

Ipecac.

IPECAC has long been favorably known to the medical profession. Its value has been recognized by many practitioners in the treatment of amebic dysentery, as an hepatic stimulant and as an intestinal antiseptic.

Physicians who long ago discarded Ipecac medication because of the uncertainty of enteric coatings are welcoming Ipecac "back to the fold," since it is now possible to administer massive doses of the drug without coating of any kind.

This heretofore unknown method of giving Ipecac is made possible through the absorption of Ipecac alkaloids with a purified form of hydrated aluminum silicate, and since, in this form, the alkaloids of the drug are not liberated until in the presence of an alkaline solution, the drug passes the stomach unchanged and the alkaloids are liberated in the intestinal secretions.

The reawakened interest in Ipecac is due to its proven specificity in amebic dysentery and to the fact that large doses of the absorbed Ipecac alkaloids may be taken by mouth without

nausea. Given in this way, Ipecac has been used extensively in a number of diseases where it was heretofore impracticable. It has been shown that the drug possesses decided value in pyorrhea, amebic infections of the tonsils, typhoid fever, and various intestinal disturbances, such as flatulence, diarrhea and constipation. The almost startling results that have been attributed to the administration of large doses of Ipecac by means of this new compound make it appear that its field in therapeutics is even wider than first anticipated. It is said to be quite possible to give patients the equivalent of 100 grains of the drug daily without nausea or vomiting, and the tablets may be crushed before swallowing.

In addition to these Alcresta Tablets of Ipecac, as this product is known, Eli Lilly & Co., the manufacturers, have recently added to their extensive line an Ipecac laxative tablet called Ipelax—a combination of the usual A. S. & B. with the addition of the equivalent of five grains of Ipecac in each tablet, a dose heretofore quite unusual in a tablet without an enteric coating.

Interesting researches are being conducted at the Lilly Scientific Laboratories, and in the light of already published information it would seem that Ipecac is entering upon a new era in medicine. Interesting literature will be sent our readers by Eli Lilly & Co. on request.

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UNITED STATES FOOD ADMINISTRATION.

THE United States Food Administration announces the creation of an Advisory Committee on Alimentation, the purpose of which is to gain the active co-operation of experts in the determination of policies of food control from the standpoint of the science of nutrition. The committee consists of C. L. Alsberg, Russell H. Chittenden, C. F. Langworthy, Graham Lusk, Lafayette B. Mendel and E. V. McCollum.

Dr. Alsberg is Chief of the Bureau of Chemistry, Department of Agriculture, and as such is in charge of the administration of the pure-food law. Throughout his term of office in this position, six years, the administration of this exceedingly important department has been carried out with distinguished ability, with fidelity to the highest interests of the consumer, and in accordance with a policy of constructive development of the industries devoted to and related to the production of foodstuffs.

Professor Chittenden is director of the Sheffield Scientific School of Yale University, and is regarded as the dean of American physiological chemists. Throughout his nearly 40 years of activity in research Dr. Chittenden has devoted his largest attention to the problems of human nutrition, in particular to the metabolism of protein. His views concerning the adequacy of smaller amounts of protein in the diet than were customary in Anglo-Saxon countries have gradually received recognition, and his recent books on physiological economy in nutrition represent an advance expression of this point of view.

Dr. Langworthy has been for many years the head of the office of Home Economics of the Department of Agriculture. Dr. Langworthy was one of the earlier students of nutrition in our country, having been associated with Atwater in the early days of the history of the calorimeter in the United States, and many of the basal analyses of foodstuffs rest upon his investigations. Dr. Langworthy has carried through and supervised a large number of studies of regional diets, through which our knowledge of the food habits of different sections have been greatly enlarged. In recent years Dr. Langworthy has devoted his attention to the development of the utilization of foodstuffs within the home, and his name is thus familiar to the majority of American housewives.

Dr. Lusk is Professor of Physiology in Cornell University Medical College, New York City. A product of the school of Voit and Rudner, Dr. Lusk has devoted the past 20 years to the investigation of the fundamental problems of human nutrition, particularly in the relations of food need and work. The facility of Dr. Lusk in the exposition of the intricacies of his subject is well illustrated by the fact that he is at once the author of a successful book written for scientists and an unusually happy presentation of the subject in primer form for the layman.

Dr. McCollum, at present a Professor in the Department of Agriculture in the University of Wisconsin, has accepted a call to Johns Hopkins University to be the first Professor of Bio-Chemistry in a newly-established department devoted to that subject. Dr. McCollum has executed within the past 10 years fundamental researches dealing with the relationship, in animals and men, of proteins of different sources, and also of the important, though but recently discovered, efficiency factors in nutrition, whose absence results in deficiency diseases that are now the subject of great attention and active research in medicine.

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Dr. Mendel is Professor of Physiological Chemistry in Yale University. In association with Osborne of the same university Dr. Mendel has for years been engaged in a comprehensive research on protein metabolism in its relations to growth and health, carried out under the auspices of the Carnegie Institution of Washington. Dr. Mendel has for a long time officiated in an advisory capacity in the Council of Foods of the American Medical Association, and possesses wide knowledge in the practical affairs of nutrition.

In addition, Dr. Alonzo E. Taylor, Dr. Ray Lyman Wilbur and Dr. Vernon Kellogg, members of the Food Administration, are ex-officio members of the Committee on Alimentation.

The United States Food Administration also announces the creation of an Advisory Committee on Public Health. This committee has been created because the Food Administration, realizing that the nutrition of a people and the condition of its food supply bear intimate relations to the general problems of public health, sought the advice of experts in these lines. Dr. Welch has been named as chairman of the committee, the personnel of which is as follows: Leonard P. Ayer, Herman Biggs, David T. Edsall, Cary T. Grayson, A. Walter Hewlett, T. T. Janeway, F. G. Novy, Richard M. Pearce, William H. Welch and H. Gideon Wells.

Dr. Ayer is permanently identified with the school hygiene movement. He has been director of the Department of Child Hygiene, Education and Statistics of the Russell Sage Foundation during the past ten years, and is the author of books and articles on the educational and statistical phases of health work.

Dr. Biggs is a member of the Rockefeller Institute and an authority on public health and sanitation. As a representative of the Rockefeller Foundation, Dr. Biggs has recently completed a survey of the health conditions of France, with particular reference to tuberculosis.

Dr. Edsall is Professor of Internal Medicine in Harvard University. He has in the past devoted much effort to the investigation of nutritional diseases, and within recent years has become identified with research in the general domain of industrial diseases, which bear to nutritional diseases, both in the individual and society, a close relationship.

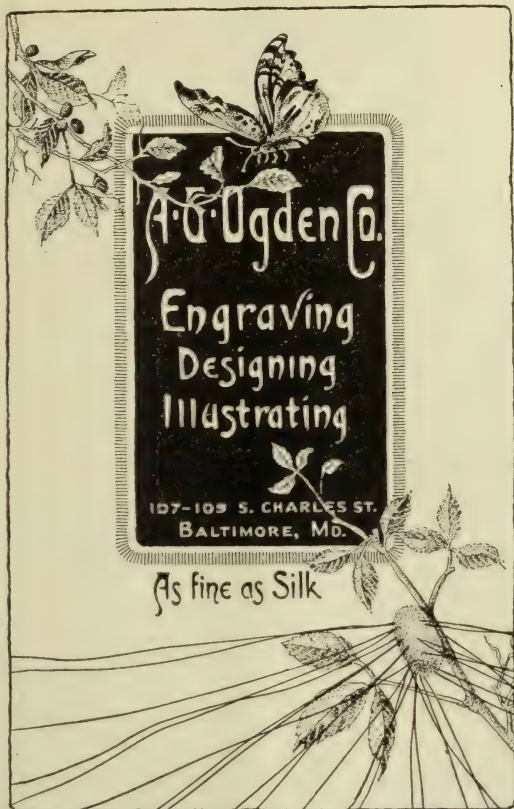
With the creation of a large army and navy, the public service has a natural relation to the work of food control, and to represent the interests of the armed services of our country Admiral Cary T. Grayson has been placed upon the Advisory Committee.

Dr. Hewlett is Professor of Internal Medicine in Stanford University and is a recognized authority on the subject of diseases of the circulation and elimination.

Dr. Janeway is Professor of Internal Medicine in Johns Hopkins University. He is the author of books and articles on diseases of circulation and elimination.

Dr. Novy is Professor of Bacteriology in the University of Michigan, and through years of active research over the broadest domains of his subject has established himself as an authority upon the subject of general sanitation.

Dr. Pearce is Director of the Department of Research Medicine in the University of Pennsylvania. Dr. Pearce has paid particular attention to the subject of national health and sanitation, and has during the past two years, as a representative of the



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Rockefeller Foundation, completed surveys of the conditions of health and sanitation of Brazil and the Argentine Republic, at the requests of the governments of those countries.

Dr. Welch, Professor of Pathology in Johns Hopkins University, is scientifically and personally regarded universally as the dean of the American medical profession. There are few departments of pathology to which Dr. Welch has not contributed in research, and there are no departments connected with public health upon which he had not impressed the influence of his wisdom and experience.

Dr. Wells is Director of the Sprague Memorial Institute of the University of Chicago, a research institution devoted to the investigation of diseases of constitutional type. Dr. Wells is the author of a very successful work on chemical pathology, the first of its kind in any language, and has contributed important research to many subdivisions of medical science.

It is believed that through the advice and co-operation of this committee, representing specialized workers in the various correlated departments of medicine, the administration of food control will be enabled always to work for the best interests of the health of the different classes in different sections of our country.

In addition, Dr. Alonzo E. Taylor and Dr. Ray Lyman Wilbur, members of the Food Administration, will be ex-officio members of the committee.

SAVING MOTHERS.

MORE women 15 to 45 years of age die from conditions connected with childbirth than from any disease except tuberculosis. About 15,000 deaths from maternal causes occur annually in the United States, and the available figures for this country show no decrease in the maternal death rate since 1900. Maternal deaths are largely preventable by proper care and skilled attendance.

These 15,000 deaths do not measure the full extent of the waste. They are merely a rough index of unmeasured preventable illness and suffering among mothers. Furthermore, certain diseases of early infancy are closely connected with the health of the baby's mother and the maternity care she has received, and these diseases cause about one-third of all the deaths occurring among babies under one year of age. More than 75,000 babies die each year from this group of diseases because they do not have a fair start in life.

The life and health of the mother are in every way important to the well-being of her children. Breast feeding through the greater part of the baby's first year is his chief protection from all diseases, and mothers are much more likely to be able to nurse their babies successfully if they receive proper care before, at, and after childbirth.

The expectant mother should at once consult a physician. She should remain under supervision so that any dangerous symptom may be discovered as soon as it appears. She should learn how to take care of herself, and she should have proper food and rest and freedom from anxiety. When the baby is born the mother needs trained attendance. A difficult maternity case is one of the gravest surgical emergencies. Many people do not seem to understand that in any case complications may arise which can be met safely by prompt and skillful scientific care, but which at the

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hands of an unskilled attendant may cost the life of mother or child, or both. Even after confinement the mother needs continued supervision and rest until her strength has returned.

Thousands of mothers, both in city and country, do not have the essentials of safety, partly, perhaps chiefly, because they do not realize the dangers involved in lack of care or else accept the dangers as unavoidable. Many women are at present unable to obtain proper care, but when all women and their husbands understand its importance and demand it for every mother, physicians will furnish it, medical colleges will provide better obstetrical training for physicians, and communities will see to it that mothers are properly protected.

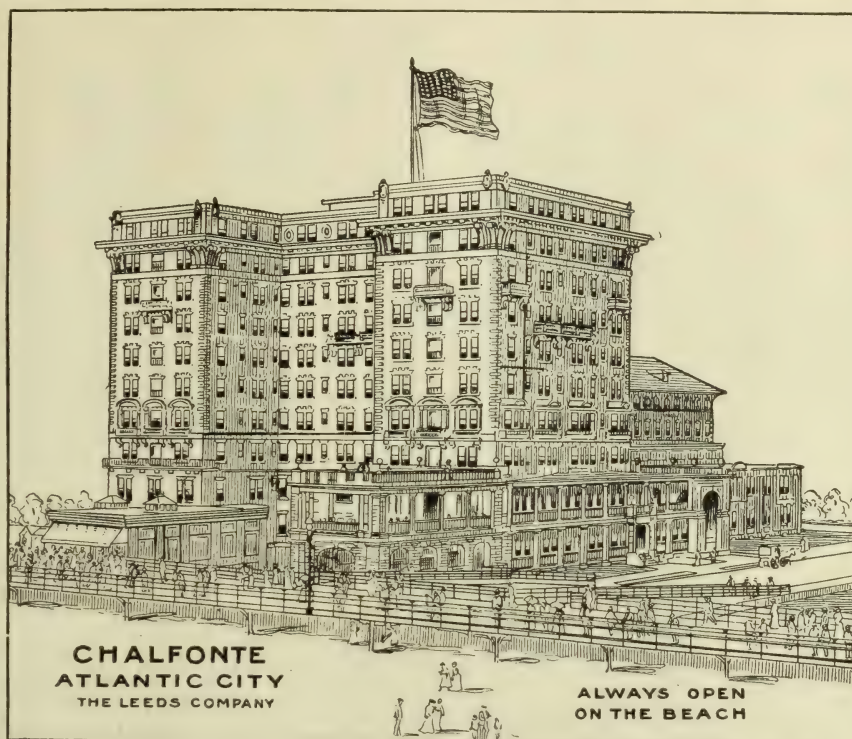
Little has been done as yet to show women that much of the waste of mothers' lives and health is unnecessary. Even less has been undertaken by communities to provide protection for them. Many communities which have studied their typhoid and tuberculosis death rates and have undertaken costly measures to reduce them have been heedless of the death rates among mothers. It is not strange, therefore, that since 1900 the typhoid rate for the country as a whole has been cut in half, and the rate from tuberculosis has been markedly reduced, while the death rate from maternal causes has shown no demonstrable decrease.

Just now the importance of adequate maternity care is to be made plain to a community, and just how skilled care and instruction are to be made available for all mothers, are of course local questions to be considered by each community. The pre-natal clinics and pre-natal nursing which are being developed in many cities suggest a method of supervision and instruction which might well be extended. Even in cities where such work is carried on and where good hospitals are numerous, the number of mothers reached is small in comparison with the number who bear their children without adequate care.

Difficulties are perhaps greatest in rural districts where the sheer inaccessibility of a physician is often added to the other elements of the problem. Here a public nursing service, with headquarters at the county-seat or other accessible town, would probably be the first step, placing at the service of every expectant mother a visiting nurse who is especially equipped to give her information about personal care and to watch for symptoms of trouble demanding medical advice. As such a nursing service develops, its headquarters might become, with the co-operation of physicians, a sort of maternal and child-welfare center to which not only expectant mothers, but also mothers with babies, could come for instruction, examination and advice. If no general hospital were conveniently near, a cottage hospital for mothers and babies might ultimately form a part of such a center.

A more general use of existing provisions for scientific maternity care and the extension of provisions for such care in all types of communities should serve to reduce the number of deaths among mothers and babies and to improve the health and general condition of children throughout the country. A full discussion of the causes and prevention of maternal deaths and an analysis of available statistics are contained in a report on Maternity Mortality, published by the Children's Bureau.

The following Children's Bureau publications are of special interest in connection with work for the welfare of mothers and



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babies, and may be obtained upon request from the Children's Bureau, Washington, D. C.:

"Birth Registration: An Aid in Protecting the Lives and Rights of Children." 20 pp. 3d edition. 1914. Bureau publication No. 2. Tells why every birth ought to be registered with local authorities.

"Pre-natal Care." By Mrs. Max West. 41 pp. 4th edition. 1915. Bureau publication No. 4. Describes the care a mother should have before her baby comes.

"New Zealand Society for the Health of Women and Children: An Example of Methods of Baby-saving in Small Towns and Rural Districts." 18 pp. 1914. Bureau publication No. 6.

"Infant Care." By Mrs. Max West. 87 pp. 1914. Bureau publication No. 8. Tells a mother how to take care of her baby through the first two years.

"Infant Mortality: Results of a Field Study in Johnstown, Pa., Based on Births in One Calendar Year." By Emma Duke. 93 pp. and 9 pp. illustrations. 1915. Bureau publication No. 9.

"Infant Mortality, Montclair, N. J.: A Study of Infant Mortality in a Suburban Community." 36 pp. 1915. Bureau publication No. 11.

"Infant Mortality: Result of a Field Study in Manchester, N. H., Based on Births in One Year." By Beatrice Sheets Duncan and Emma Duke. Bureau publication No. 20. (In press.)

The Johnstown, Montclair and Manchester reports show something of the home and community conditions which endanger babies' lives.

"Baby-Week Campaigns" (revised edition). 144 pp. and 15 pp. illustrations. 1917. Bureau publication No. 15. Tells how a week (or a day) may be used to show a community what it ought to do for its babies and mothers.

"A Tabular Statement of Infant Welfare Work by Public and Private Agencies in the United States." By Etta R. Goodwin. 114 pp. 1916. Bureau publication No. 16. List of infant welfare agencies and their activities in cities having a population of 10,000 or over.

"Maternal Mortality From All Conditions Connected With Childbirth in the United States and Certain Other Countries." By Grace L. Meigs, M.D. 66 pp. 1917. Bureau publication No. 19. Discusses causes and prevention of deaths in childbirth and reviews available statistics.

"How to Conduct a Children's Health Conference." By Frances Sage Bradley, M.D., and Florence Brown Sherbon, M.D. Bureau publication No. 23. (In press.)

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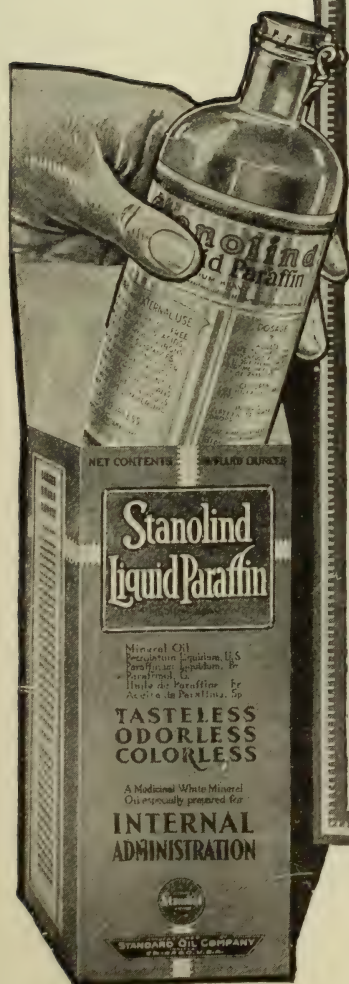
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LOCAL DIRECTORY

THIS Directory is maintained mainly for the benefit of local firms seeking the patronage of physicians and their families. Only well established and reliable concerns will be represented, and doubtless the space at our disposal will be constantly in demand. In responding to these exploitations, the reader will find it mutually advantageous to mention the MARYLAND MEDICAL JOURNAL.

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to foist upon the unwary a crude oil, that had proved injurious upon application, the firm name of Sander & Sons is illicitly appropriated, the make-up of their goods imitated, and finally the medical reports commenting on the merits of their excellent preparation are made use of to give the desired luster to the intended deceit.

This fraud, which was exposed at an action tried before the Supreme Court of Victoria at Melbourne, and others reported before in the medical literature, show that every physician should see that his patient gets exactly what he prescribed. No "just as good" allowed.

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THERE are many times when suitable tonic medication is urgently called for. From stress and strain of work under unfavorable conditions, such as hot, humid and depressing weather, the human organism will become bereft of—or lacking in—its vital forces. All the functions of the body will suffer in sympathy with each other, and unless the sufferer is treated in time the result is sure to be a nervous breakdown. This is when the employment of a reliable tonic is indicated. Gray's Glycerine Tonic Comp. is especially effective because it acts by aiding and reinforcing the natural forces of the body. It promotes the activity of all the varied functions concerned in the working of the body's mechanism, and thus imparts vitality to the nervous system. A few days' use of this dependable tonic usually suffices to produce a marked and substantial change in the whole bodily condition.

Some of the Chief Routes of Infectious Diseases.

It must be borne in mind that the routes by which the discharges of the sick person pass to the well person are the same as those by which discharges pass from the healthy person to the healthy person in ordinary life. For example, the routes for nose and mouth discharges are mouth spray and sputum conveyed by direct contact and by the hands. The routes for bowel and bladder discharges are largely by the hands, and for all discharges the things infected by them directly or by means of the hands, especially those things which then go to the mouth, or touch things which go to the mouth, as food, water, eating utensils, towels, pipes, etc.

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tious diseases with any degree of certainty the most careful attention must be paid to personal hygiene. Seeing that infection is largely communicated by direct contact, by mouth spray and sputum and by the hands, a most important way of preventing the spread of infection is by keeping the mouth as clean as possible and by keeping the hands scrupulously clean. By cleanliness is meant specific cleanliness, that which actually eliminates disease germs. This object can be accomplished, so far as the mouth and nose are concerned, to a large extent, by the use of Dioxogen as a mouth and throat wash and nose spray. The hands can be kept specifically clean by fairly frequent washing with soap and water, in conjunction with Dioxogen.

Specific cleanliness is the keynote of modern personal hygiene, and in the attainment of specific cleanliness Dioxogen is a factor of considerable importance.

The "City" Anemic.

THE hard hum-drum city life, especially of those whose days are spent indoors, in offices, bending over desks, ledgers and school books, is almost certain, sooner or later, to leave its traces upon the man, woman or child thus unfortunately situated. General sluggishness of metabolism, due to indoor confinement in a vitiated atmosphere and lack of exercise is followed by failing appetite and later by degenerative blood changes of anemic nature. While Pepto-Mangan (Gude) cannot, of course, remedy the cause of the anemia and general de-vitalization, it almost always assists materially in overcoming the anemic blood state, increases appetite and acts as a real tonic and general reconstructive. As Pepto-Mangan (Gude) is

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